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FRIDAY, SEPTEMBER 23, 1921.
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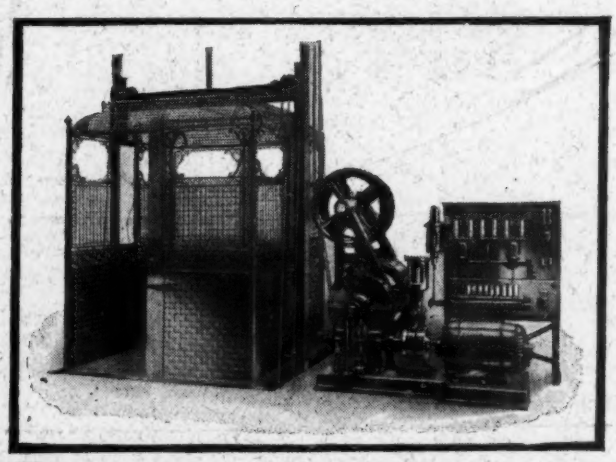

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THE BUILDER

A JOURNAL FOR THE ARCHITECT AND CONSTRUCTOR.

WITH WHICH IS INCORPORATED THE "BRITISH ARCHITECT."

VOL. CXXI.—No. 4103. SEPTEMBER 23, 1921.

THE WORK OF THE BRITISH ASSOCIATION.

THE annual meeting of the British Association has just concluded in Edinburgh, where between two and three thousand leaders of science and others interested in science have met, exchanged opinions, and listened to the latest views of experts in almost every field of scientific investigation. Years ago this Association, now of ninety years' standing, confined its attention to a small number of subjects and contented itself with discussions upon what would be regarded by ourselves as relatively abstruse matters, but time has brought changes. Many years ago an educational section was introduced, and now engineering problems and a great number of new practical fields, including economics, have been added to the sphere of this important body.

We cannot concern ourselves with scientific theories. The dissociation of the atom, however vital, must leave us cold, though fifteen hundred persons crowded to hear the lecture on atomic structure. Even if we are to believe that matter has no real existence, the possibility of the disruption of electrons linked to form, say, what we imagine to be a brick, fails to fill us with alarm. At the same time a man who is so self-satisfied that he never goes outside his own house is hardly likely to march with the times, and we all need the mental stimulus to be obtained from fresh air and occasional walks abroad. Nor is the work of the British Association so far removed from our own problems as many are apt to imagine. Of the fifteen sections which represented its activities at Edinburgh quite a number dealt with problems which, if not directly concerning us, have very important indirect bearing on the material interest of our readers. The presidential address to the Engineering Section, for example, brought very forcibly to public notice the possibilities of cheap power. It was stated that the world's available water power was some 200 million horse power, and that only about 12 per cent. of this has been developed, and that mostly during the last decade. In this country remarkably little has been done to utilise water energy provided by Nature, although the transmission of such energy in the form of high-tension electricity over half the length of these islands is a commercially sound proposition. In a country like ours where coal is abundant there has been little inducement in the past to embark on capital outlay for such development with coal obtainable at a few shillings a ton at the pit-head, but the case is different now. We shall never again see cheap coal. We all know that millions of pounds' worth of building work is held up and is likely to remain held up by high costs, and there is hardly a material or trade process connected with building which does not involve power. Of course, the immediate difficulty in the way of development by private enterprise is capital, and we suggest to the Government that this matter might be considered in relation to unemployment. The thoroughly demoralising "dole" system is at last becoming deservedly discredited, the most hopeful sign of all being the objection of the worker himself to doles. We have no wish to see the Government embark upon water power schemes, but it might conceivably assist with guarantees to substantial firms which would enable the necessary capital to be raised, or might make repayable long-term loans on approved schemes. In most undertakings for the harnessing of water we imagine that a very considerable amount of unskilled labour could be usefully absorbed, though certain geographical and housing difficulties would usually have to be overcome. Whatever the "lions in the path," cheap power is one of the first necessities for industry to-day. If we are to exist, production must be decreased in cost, and we want to see the electric motor not only in every village workshop but in every house, so that the now costly human energy of the muscles can be confined to those variable tasks necessarily dependent upon human intelligence alone.

Another section of the British Association, dealing with economics, had something to say upon the relations of employers and labour. The contention made that employers were inconsiderate and indifferent in making selection of their men for suitable tasks was vigorously contested. There is no doubt whatever that we all do best the tasks which are most congenial, and though choice must necessarily be limited we imagine that more consideration than is often given might be accorded to the progress and, incidentally, happiness of subordinate individuals in many firms. To tell a man frankly he is in a wrong billet is often a real kindness. Many young men "pitched" into clerical work where they will never rise to good positions might do much better for themselves and their employers in outside supervisory duties, while the converse might prove true for those who have little resource or aptitude for the handling of workmen.

The Educational Section, again, embarked upon a discussion on vocational training. We do not propose to "enter the lists" in the wrangle between academic and utilitarian training, but it is quite apparent that given a general grounding the special claims of the after-career must in these days be more considered by our schools. In any movement of this kind the Universities and other examining bodies must take an active part, for the schools cannot afford to move alone. Vocational training has not only direct advantages, it may often by the information on a career which it imparts prevent a boy from adopting a walk in life for which he is unsuited while he still has the advice of those who have studied his individuality. The cost of education and the admitted need for economy came in for comment. A distinction, however, was very clearly drawn between true economy and the mere immediate saving of money. This is a matter to which attention has been drawn in our columns. As one of the speakers well put it, not only must the cost of education be summed up, but in a parallel column must be cast the price of ignorance.

There are a few who criticise the extension of the fields covered by the British Association and regret the admixture of technical and even historical subjects among the pure sciences which were enough for earlier meetings. For our part we feel that a broad basis is all to the good. The value of science needs a great deal of pressing home in this country, and can best be accomplished by bringing together a large number of educated people by providing sufficiently wide fields for investigation.

Architecture, though not primarily a science, possesses in these modern times so many scientific attributes that it cannot afford to stand aloof from scientific study. Our problems which need solution are many, and though these are technical matters often remote from pure science it is only through pure science that they can be properly investigated.

NOTES.

Public Lectures on Architecture.

THE remarkable success which attended the public lectures on architecture, delivered last winter under the auspices of the Royal Institute of British Architects in London and jointly by the Manchester Society of Architects and the Institute of Builders in Manchester, demonstrated that the general public do take a keen interest in architecture and building. We are glad, therefore, to know that both the Royal Institute and the Manchester Society are making arrangements for a series of lectures on similar lines to be delivered during the coming session. The public interest in the work of the architect, which this and other methods of propaganda arouses, should certainly encourage architects to produce the best of which they are capable.

The Institute Alterations.

THOUGH many will regret the loss of the pleasant Council Room of the R.I.B.A., there is no doubt the alterations being carried out under the direction of Mr. Arthur Keen will facilitate the working of the Institute business. The Council Chamber will now be what was formerly the Common Room. With their new coat of paint, Nos. 9 and 10, Conduit-street may now be singled out as the property of the Institute and as the possible site of a worthy headquarters for the profession.

Overcrowding of the Profession.

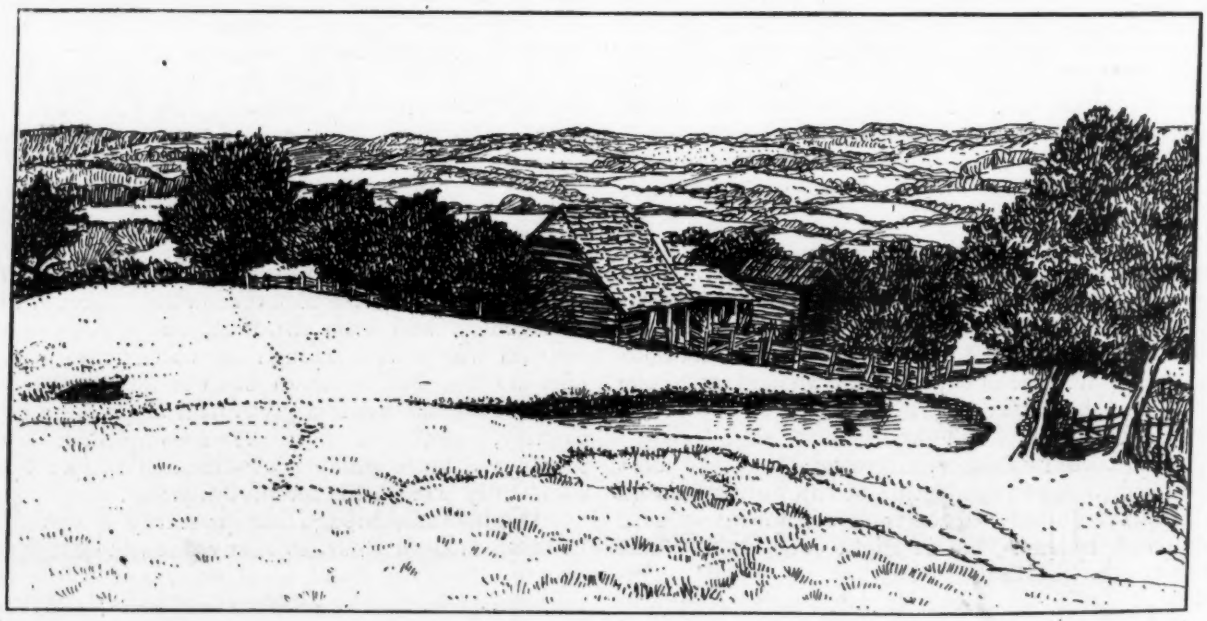
A FURTHER emphasis of the overcrowded state of the architectural profession is to be found in a resolution passed on Saturday last by the National Convention of the Architects' and Surveyors' Assistants' Professional Union, which the governing body feels cannot be too widely made known. This expresses "alarm at the increasingly overcrowded state of the architectural and surveying professions in the country, the consequent under-remuneration of all practising, salaried, and assistant architects and surveyors; and the consequent unemployment of a large number of young men and women who, having entered the professions through the regularly constituted channels, must, at the completion of their arduous and expensive period of training or soon after, seek appointments abroad or leave the professions." The resolution also warns parents, guardians, schoolmasters, and others of "the responsibility they incur in entering those of whom they have charge (more especially if no particular aptitude for such callings is shown by them) into callings so overcrowded that they cannot now provide sufficient means to those already in them to maintain the status required of them by the public; and, further, to warn them, in any case, if they are unable to put an intended entrant into a recognised school for the teaching of the professions, not to enter into any contract of pupilage or apprenticeship with any firm without first consulting some competent authority that the training received with such firm will be thorough and beneficial."

The Horse Guards' Parade.

THE proposals in regard to the improvement of the Horse Guards' Parade which seem likely to be carried out do not go nearly so far, nor are they so completely satisfactory, as those suggested in a scheme brought forward by Mr. F. W. Speaight in 1909, in which he had the very able assistance of the late C. E. Mallows (see *The Builder*, March 6, 1909). Thus we have a repetition of the emasculation of his scheme for the improvement of Hyde Park Corner. Though Mr. Speaight's scheme for that could not be considered an ideal one, the faint reflection of it in the executed scheme has left Hyde Park Corner rather worse than it was before from an architectural point of view.

Smoke Abatement.

THE exceptional purity and clearness of the air in London and other manufacturing areas which resulted from the decreased use of coal during the strike last spring served to focus the attention of the public on the question of smoke abatement, but although the damage done by smoke and soot to health and property was much discussed and fully realised at the time, nothing seems to have been done towards reducing the amount of soot-producing coal consumed. The question was the subject of a paper by Dr. J. S. Owens (Secretary of the Meteorological Office Advisory Committee on Atmospheric Pollution) at the meeting of the Chemical Section of the British Association last week, in which he pointed out that the major part of the impurities in the air in a town like London are caused by domestic fires. In purely industrial towns, however, factory chimneys are the worst offenders, and we agree that manufacturers should be compelled to make use of one or other of the devices on the market for the prevention of the emission of black smoke. The case of domestic fires is a more difficult one owing to the prohibitive cost of altering grates already in use, but we think the manufacturers of grates and ranges might with advantage make further investigations with a view to designing grates that will emit the



The Sussex Weald as seen from Burwash.
From a Sketch by MISS MILDRED F. WINTER. (*See p.* 373.)

"The Rose and Crown," Burwash.

From a Sketch by MISS MILDRED F. WINTER. (*See p.* 373.)

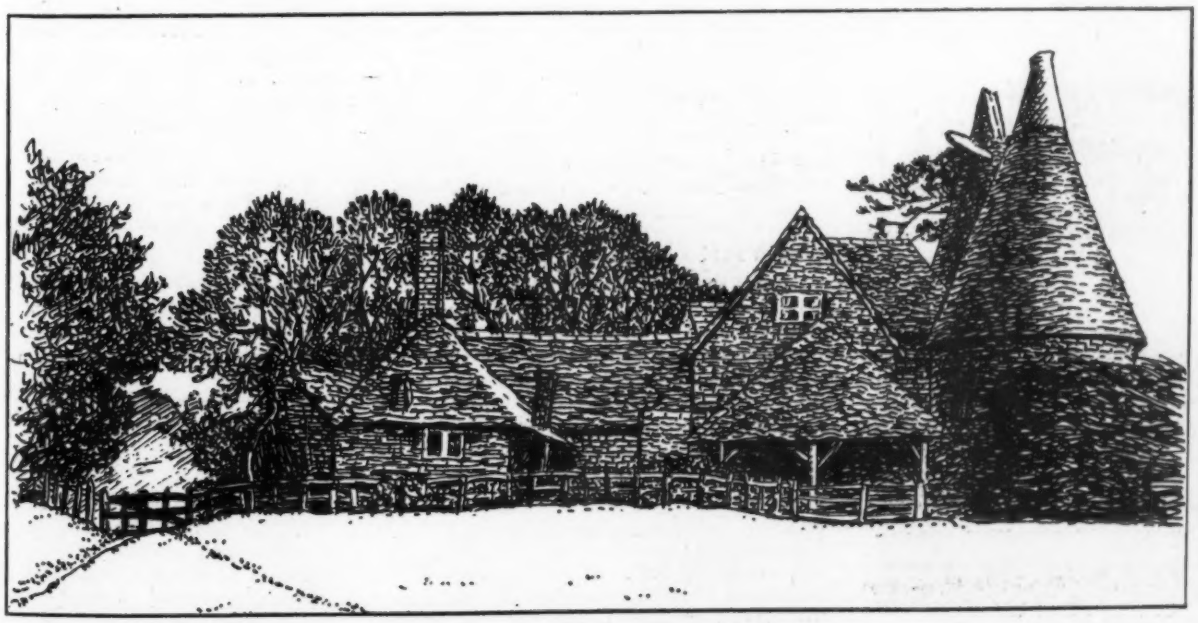
minimum of smoke. Perhaps the memorial which the British Association is to send to the Minister of Health calling attention to the need for further legislation in the matter, or more effectively administering the existing law, may have some effect.

Trade Unions and Trade.

PUBLIC attention has recently been called to the difficulties caused to employers by some of the trade union rules, and the recent strike at Messrs. Vickers works at Barrow seems to afford an example of this. According to the report some twelve hundred men have gone on strike because one of their number was in arrears with his contributions to the union, and he had thus become a non-union man. Although the man promised to pay up his arrears, the men had refused to return to work until the question of his reinstatement had been considered by the union, and the firm was not informed until the very day they went on strike. It is now common knowledge that contracts are being placed in other countries because British firms cannot undertake to give delivery within a specified time; and if the domestic affairs of trade unions are constantly to be made the excuse for striking things can only go from bad to worse. A strike on such a ground at a time when the ratepayers are being asked to supply unemployment benefit cannot meet with the approval of any responsible trade union leader.

"London of the Future."

AN admirable effort to visualise the problem of London will shortly be before the public in "London of the Future," to be issued early in October by Mr. Fisher Unwin. If it demonstrates that the time has come to put some check on the haphazard growth and development which has been witnessed during the past hundred years in London it will have answered its purpose. It should stir the imagination, though it aims to do this more by words than pictures, and aims to show what is practically possible and to avoid a chimerical ideality. The fact is that in its aspect as a world-centre London would develop in the most practically business-like way by giving a freer rein for the creation of beauty and dignity to all who have its control and development in their hands. The truly practical will be those who have fine ideals.



An Oast-House, Burwash.

From a Sketch by MISS MILDRED F. WINTER. (*See p.* 373.)

GENERAL NEWS.

Professional Announcement.

Mr. John A. Rosevear, P.A.S.I., A.M.T.P.I., of East Sheen, S.W.14, has been notified that he has passed the special examination recently held by London University for the Diploma in Town-Planning and Civic Engineering of that University. Mr. Rosevear secured the Certificate of University College in the same subjects in 1915, taking first place in the examination, and has now obtained one of the first two Diplomas granted by the University.

Honour for an Architect.

The King of Norway has conferred on Mr. Alfred Wintle Johnston, architect, of Chelsea, founder of the Viking Society for Northern Research, the decoration of a Knight of the First-Class of the Order of St. Olav.

Church Decoration.

Messrs. John Daymond & Son, of 1–7, Edward-street, Vincent-square, S.W., inform us that they executed the wall panelling at St. James', Kidbrooke, the oak lectern at St. Mary's, East Grinstead, and the figure in gilt gesso at St. Chrysostom, Manchester, illustrated in our last issue. Mr. Philip A. Robson, F.R.I.B.A., is the architect.

Archæological Discoveries in South London.

In the course of a lecture at Southwark Cathedral last week, on "Southwark Cathedral and Its Neighbourhood," the Rev. T. P. Stevens said a doorway in the Norman style had been found in a shop in Waterloo-road, opposite the church of St. John. In the cellars below the shop were two small and bent Gothic arches with deeply-cut mouldings, the shafts in the jambs having foliated capitals. On the same level was a large Gothic archway with a square head over it and circles in the spandrels, and in the wall of an adjacent building was a three-light window of the Decorated period. The original glass had disappeared, but the tracery was intact.

Sir Rowand Anderson's Estate.

Sir Robert Rowand Anderson, LL.D., F.R.S.E., F.R.I.B.A., first President of the Institute of Scottish Architects, who died on June 1, left personal estate in the United Kingdom valued at £65,787. In addition to large bequests to Scottish charities, including £500 to the pension fund of the Royal Scottish Academy, he bequeathed such of his collection of furniture, china, &c., as the Lord Chamberlain might select to Holyrood Palace, and the residue of his property as to one-half to the Institute of Scottish Architects, and one-fourth each to the Edinburgh Royal Infirmary and the Longmore Hospital, Edinburgh.

War Memorial at Hunsworth.
MR. LOUIS AMBLER, F.S.A., F.R.I.B.A., Architect.

Proposed New Picture Theatres.

Mr. P. A. Hinchliffe, F.R.I.B.A., of 14, Regent-street, Barnsley, is the architect of picture theatres on the following sites, plans for which have been passed by the respective local authorities:—The Walk, Leicester; Barnsley-road, Goldthorpe; Station-road, Stainforth, near Doncaster; and Denby Dale, near Penistone. Plans have been passed by the Wath-on-Dearne Urban District Council for a picture theatre, of which Mr. P. J. Stunlet, of 14, Saville-row, Newcastle-on-Tyne, is the architect. The Bolton-on-Dearne Urban District Council has approved plans for the erection of the "New Hippodrome" at Goldthorpe, of which Mr A. Whitaker, of 18, Bank-street, Sheffield, is the architect.

Church Organs.

In the course of a paper on "Church Architecture and Organs," read at the annual congress of the National Union of Organists' Associations, on Tuesday, Sir Charles Nicholson, F.R.I.B.A., said the worst mistakes were made in placing a new instrument in an existing church when there was no architect on the spot to watch the general interests of the fabric. The result in such cases could often be compared with the music produced by an orchestra in which each instrument was tuned to a different pitch. The best positions for an organ were either in the western gallery or upon the rood loft. Space all around the instrument was most essential. He advocated the wooden organ-case as used in the eighteenth and early nineteenth centuries, leaving, however, the pipes exposed.

Wolverhampton Archæological Society.

The members of the Wolverhampton Archæological Society held their last excursion for the present season recently, when the members journeyed by char-a-bancs to Tamworth. On arrival Mr. J. Harley (Honorary Secretary) conducted the party over the church of St. Editha, one of the six collegiate churches of Staffordshire. He pointed out various objects of interest—the Norman arches, all that remains of the central crossing of the old church, the tombs of the Ferrers in the chancel, and the ancient glass in the vestry windows. An inspection was made of the old church plate and the parish registers, the earliest entry dating from 1580. From the church the party went to the Castle Hotel, where tea was served, and afterwards Mr. J. Harley read a short paper on Tamworth Castle and Church. Afterwards the castle was visited and an inspection made of its many treasures. Keen interest was shown in the specimens of coins minted in the town mint in Saxon and Norman times, some of the recently-acquired specimens being very rare.

WAR MEMORIAL AT HUNSWORTH, YORKSHIRE.

THIS memorial was unveiled on New Year's Day, 1921, and the photograph was taken a few days later, before the site was laid out according to plans prepared by the architect, Mr. Louis Ambler, F.S.A., F.R.I.B.A., of Temple Chambers, Temple-avenue, E.C. 4, from whose designs and full-size details the monument was executed in Portland stone by Messrs. B. Watson & Sons, of Dudley Hill, Bradford. The statue of "Victory" was carved by Messrs. Farmer & Brindley, of Westminster Bridge-road, S.E. 1. The total cost, apart from the site and laying it out, was nearly £800. The front panel contains the names of twenty-eight men of the district who gave their lives in the war, and the two side panels contain the names of 121 who served in the Navy, Army, and Air Force.

War Memorial at Hunsworth: Figure.
MR. LOUIS AMBLER, F.S.A., F.R.I.B.A., Architect.

COMPETITION NEWS.

North Wales Heroes' Memorial.

The premium of £100 in the North Wales Heroes' Memorial Competition has been awarded to Mr. D. Wynne Thomas, M.S.A., of St. Paul's Vicarage, Halliwell, Bolton. The assessors were Mr. G. Gilbert Scott, A.R.A., and Lord Plymouth.

Auckland.

Designs for a war memorial building, for the Auckland (N.Z.) War Memorial Committee and the Auckland Institute and Museum. Sending-in day, February 28, 1922. (See our issue for September 2.)

[Members of the R.I.B.A. are advised not to take part in this competition until the conditions have been approved.]

Labour-Saving House.

Designs for a labour-saving house, to cost £2,500, in connection with the Ideal Home Exhibition. Sending-in day, November 30. (See our issue for September 9.)

Birmingham.

FOR THE WAR MEMORIAL COMMITTEE.—Designs for a war memorial. Sending-in day October 12. (See our issue for June 17.)

Cairo.

FOR THE EGYPTIAN GOVERNMENT.—Designs for the new Qasr el' Aini Hospital and School at Cairo. Sending-in day, October 3. (See our issue for April 8.)

Harrogate.

FOR THE HARROGATE CORPORATION.—Designs for a war memorial. Sending-in day, December 1. (See advertisement this week.)

An Irish Department of Fine Arts.

We are informed that a Department of Fine Arts has been established in Dublin under the direction of Count Plunkett. One of the projects he has already in hand is the exhibition of works of art illustrative of Irish genius. He is also concerned with the formation of an Academy of Art.

CORRESPONDENCE.

"The World as we Find It."

SIR,—I do not wish to enter into any controversy with Mr. Aylwin, but his reply to my letter confirms all that I said. He tells us that the failure of the craftsman is not a matter for lamentation since it enlarges the control of the architect, much in the same way as it would enlarge the general's control in a battle to do without the army. Mr. Aylwin then terminates his letter by telling us that it is quite natural for the single master-mind to do it all, on the ground that the vast universe is also under the direction of a single master-mind, and, therefore, why should not architecture be under Mr. Aylwin's? This is the omnipotence of the "Mistress Art" with a vengeance! Now, I could sympathise with him if he pointed out that there were many difficulties, but that he should hug his chains instead of wishing to free himself, I am unable to understand. His omnipotent claims remind one of the German Emperor and his "old ally," but it did not succeed with the German Emperor nor will it with Mr. Aylwin. He may well think it "humbug" if he imagines that when I am talking about co-operation with craftsmen it is the same as "a mob of sculptors" working on a single statue. The latter is expressing the thought of one mind through one material, not trying the impossible task of imposing it over all materials. Mr. Aylwin also misunderstands my meaning. I have much too great respect for the work of the architect to suggest any surrender of his right, nor am I making any claim to interfere with his legitimate control, but rather to strengthen and extend its scope to include the better craftsmanship, which is only possible in working through others, with an intelligent appreciation of his own limitations. His contention of omnipotence leads, and has led, to the loss of vitality and expression in materials, and of all the wonderful resources lying in them, in favour of the stereotyped conventional alternatives identified with the office drawing, through which the worker is tied to mechanical reproduction, like Mr. Aylwin's "carpenter," in the joinery shop. He does not appear to apprehend that in talking of craftsmanship I was not talking of his carpenter, and does not seem to be aware that there is anyone else. I think Mr. Aylwin is a little out of touch with his time, and I would venture to say with many of his brother architects, who recognise the importance of Professor Lethaby's more liberating teaching. He will concede, however, that the idea of a single directing mind, like that of the Creator, is absurd, because Mr. Aylwin inherits from the past all its wealth of results, and I must really challenge his comparison of himself with the former unless he can complete his contract in six days!

What I gently rebuked in my letter was the pretension of such a position as that of the architect's labour being independent of other minds, and at such a time as this Mr. Aylwin's views appear particularly reactionary and depressing. I cannot share his satisfaction that the failure of craftsmanship tends to enlarge the architect's control, a control which I never challenged, but wished to see directed to a richer incorporation with other minds. Unfortunately, when you are working in materials you want a master hand as well as a master mind, and it is a pity that Mr. Aylwin does not appreciate this need a little more, instead of hugging his omnipotence so close and playing at precedence with his Creator.

"ISIS."

The Cost of Building Working-class Dwellings.

SIR,—Mr. Yerbury's letter in *The Builder* last week very ably sums up the situation, but it is rather difficult to understand how a united and satisfied building trade is to be obtained by borrowing at a loss, or even by appointing a strong Housing Board to act as advisers and employers. The essentials for building, like any other form of enterprise, even in these philanthropic times, are sufficient profits to repay the investment of capital and remunerate labour, and security. After the past two years' experience one might be inclined to add freedom from any form of Government interference. The rates have made profitable building impossible, except in exceptional cases, and security (and with it borrowing power) has been undermined by ill-considered legislation.

There is no possibility of prices coming down to an economic level without competition, and there will be no real competition until the building trade is placed on an economic basis. The difficulty of achieving this end does not appear to be beyond the range of possibility.

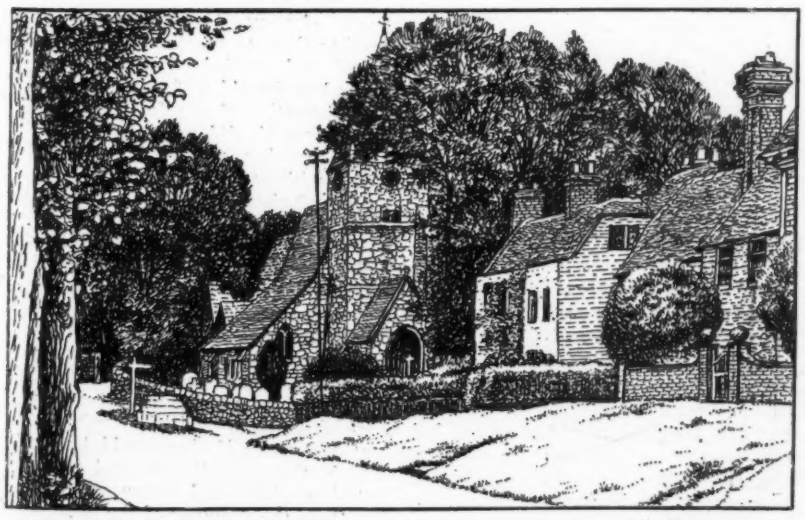
In New York the house shortage problem seems to be solved. Permit me to quote from the New York *Herald* for July 18:—"Homes to accommodate 20,897 families at a cost of 100,000,000 dols. have been planned since the tax exemption law took effect. . . . The period covered by the figures is from February 25 to July 9. . . ." The number for the same period last year was 6,604 homes at a cost of 37,143,000 dols. Consider the effect on house building if we followed this example, and the corresponding relief to unemployment.

We do not export houses, so the building trade is not affected by foreign trade to so great an extent as others, and there are plenty of materials that can be produced in this country, given the necessary inducement. Moreover, buildings are national wealth as well as a necessary of life.

By adjusting our suicidal system of local taxation we can not only permanently solve the housing problem without doles, subsidies, or costly bureaucratic interference, but find regular work for hundreds of thousands of skilled and unskilled labourers.

E. G. HOLTOM, F.R.I.B.A.

An Old House in Burwash. From a Sketch by MISS MILDRED F. WINTER



Burwash Church. From a Sketch by MISS MILDRED F. WINTER.

SKETCHES IN BURWASH.

WE reproduce in this issue some sketches in Burwash, Sussex, by Miss Mildred F. Winter.

Burwash Church, with its shingled steeple and chime of five bells, stands at the end of the village street. It is of the ordinary Norman type, probably of the 13th century, and was completely restored in 1856.

The picturesque old house in Burwash High-street stands next to the well-known William and Mary residence of the late Colonel Fielden, and is probably of a slightly later date.

"The Rose and Crown," Burwash (page 371), is a typical Sussex hostelry.

The Sussex Weald, seen from Burwash (page 370), is the district immortalised in "Puck of Pook's Hill." "Pook's Hill" and "the bubbling spring" are to be found some two miles from Burwash, and "Batemans," the residence of Mr. Kipling, lies just below the village.

One of the most picturesque features of this part of Sussex, as of Kent, is the oast-houses (page 371) used for malting hops.

WESTMINSTER HALL ROOFS, OLD AND NEW.

By W. HARVEY.

IT has been claimed for the arched hammer-beam roof of Westminster Hall that it is not only the largest but the first example of its type, and in default of historical documents the building itself may be found to contain evidence of its own descent from the works of earlier times. It is extremely unusual for a building of gigantic size to be the original of a series of smaller copies. Small primitive structures more generally precede the development of the larger examples, but the realisation of the power and means to produce surprisingly great works has sometimes led to their actual production at an early date.

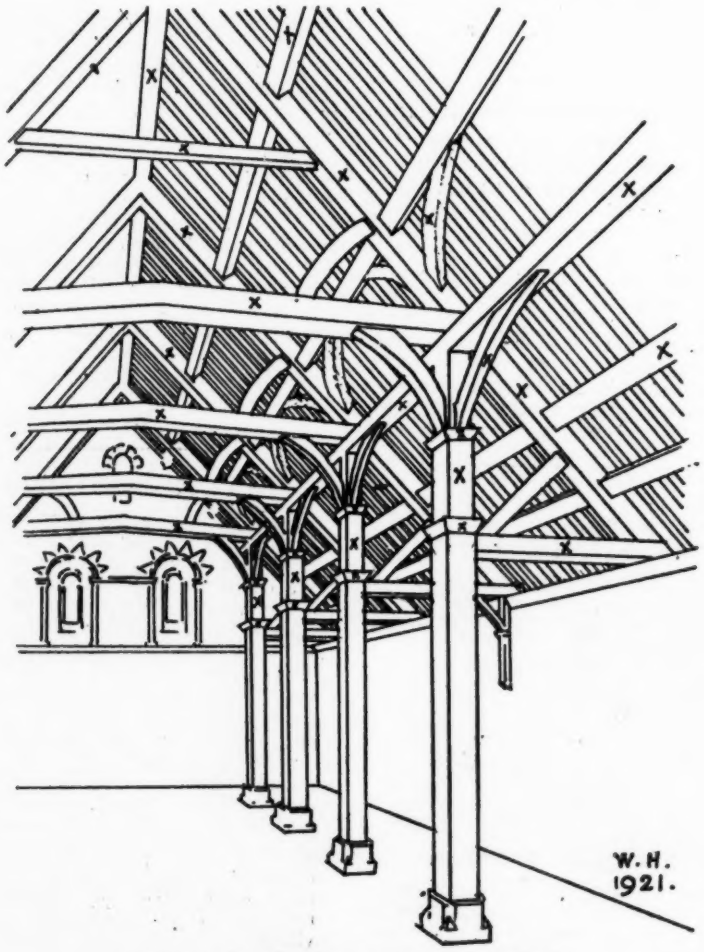
The facts show that the necessary technical skill was available, but how it came to be applied to the construction of just such a roof over the wide span of Westminster Hall is still a matter of conjecture which may be best guided by an attempt to realise the nature of the problem set by the magnificent taste of Richard II for a hall 69 ft. wide roofed in a single span.

Originally built for William Rufus, Westminster Hall had already stood three hundred years, and, judging by the outward inclination of its side walls, which were partially hacked to shape and refaced by Richard II's masons, was doubtless in a state of disrepair. The exact nature of this old Norman hall and its manner of roofing are still uncertain, but enough evidence has come to light to permit of a reasonable conjecture that its general dimensions were similar to those of the present Hall, which incorporates a large part of the old walls in its structure. Several writers agree in the supposition that the Norman hall was divided by two rows of piers or posts into a large central nave with an aisle on each side, and such an arrangement is retained in the hall of Leicester Castle, where a span of 50 ft. is covered in this manner.

Considerably smaller, and 51 years later in date than William Rufus' Hall at Westminster, the Leicester Castle roof (built in 1150) slopes from its ridge in the centre down to the side walls without any external mark to indicate the lines of posts which served as supports for heavy purlins and for the ends of the collar beams placed somewhat higher than the level of the middle of the roof. The posts of this roof, 1 ft. 10 in. square in plan, rise 27 ft. 7 in. from the floor, where they stand upon small stone bases, and, at the approximate level of the wall plate, a horizontal beam joins each post to the wall.

Supposing that in early Norman times Westminster Hall roof was built on this principle, some differences in detail might be expected owing to its larger dimensions. It is doubtful whether posts of the dimensions needed could have been obtained of sufficient length to reach more than to the level of the wall tops, some 40 ft. above the floor, and it has been suggested that stone piers may have been used. In any case a joint would probably have been made in the post at wall top level, and a separate post carried up in continuation from this point to carry the main purlin and collar beams some twenty feet higher up the roof. Similarly it would probably have been impracticable to find timbers long enough to cut the principal rafters in one piece, and they would be made in upper and lower parts meeting at or about the ends of the collar beam.

Such a roof would be a mechanically simple post and beam construction, with the outward thrusts of the principal rafters tied in by the horizontal beams to which they were probably connected by stub tenons of small dimensions compared with the size of the gigantic baulks that must have been used. Sources of weakness, especially in the resistance to wind pressure, would be the great height and possibly composite character of the interior posts or piers, and in the spongy foundation on a deep bed of river deposits. A possible cause for the outward lean of the old walls may have been the unequal weight of their outer and inner sides, for a beautiful arcade and wall passage lightened the side facing the interior of the hall.



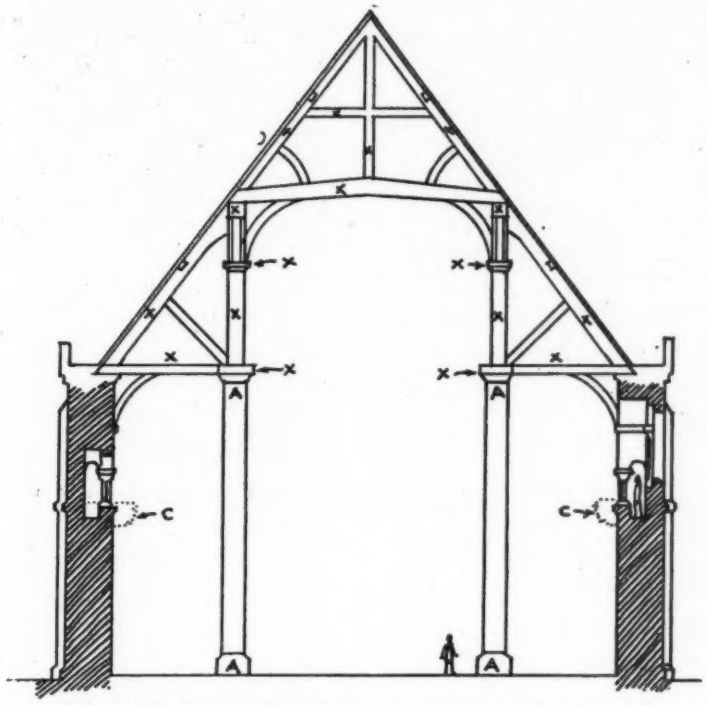
Leicester Castle Hall (from an Old Print).
[Timbers having counterparts in the roof of Westminster Hall, 1394 design, are marked "X."]

Whether the pressures of wind on the roof, lack of balance in the wall, or bad foundation caused the trouble, or whether all three contributed to it, the old hall in Richard's time must have presented a rather dilapidated appearance. The bulging walls must either have pulled away from the piers or posts in the hall or have pulled them over to something like the same inclination, with dangerous and unsightly results. As the walls and other supports rocked and leaned away from the upright the outward pressures from the rafters and from wind would have a more and more damaging effect, transforming the simple post and beam mechanism into a rackety sort of framework depending less on the posts and more on the sloping rafters with their dangerous thrust upon the wall head. Richard II was not the king to put up with such a disreputable state of affairs in the chief apartment of his palace, and, as the piers or posts in the hall probably showed their decay and their inclination from the vertical, he may have instructed his craftsmen to abolish them in their preparation of the new scheme of restoration.

A preliminary survey of the old roof supports must have put the designer of the new roof in possession of much important information. The bulging walls and inclined posts would indicate the need for careful treatment and for additional support on the outside of the hall, such as was afterwards supplied by the flying buttresses built opposite every second truss as part of the work of renovation. From the condition of the roof timbers he must have learned that the old structure in decay had come by accident to possess some of the disadvantages of an arch without any compensating advantages, and a craftsman of Richard II's time, trained and practised in all the intricacies of arch construction and balance, could not fail to grasp the situation and accept it as a challenge. If a collection of posts and beams could (accidentally and in the course of decay) behave as a partial arch with dangerous outward pressures, he was the man to design a real arch with its pressures properly adjusted and restrained to bear safely on the walls at points to be chosen by himself.

However original a man of genius may be, his method of thought must be to add one new element to a collection of old forms rather than to create all things afresh on an ideal and untried basis. Whatever remained sound in the old roof would seem to the craftsman worthy of careful study and imitation so long as it did not interfere with the principal requirements of his new scheme for a roof without objectionable posts. From this point of view the timbers forming the old roof would be almost all of them suggestive of repetition in the new. The intrusive posts or piers removed, and their supporting function replaced by an immense arch rib, what other amendments would be required? Artistically it would be necessary to dress up the proportions and detail of the roof to the mode of the day, but reasonable conservatism would indicate the acceptance of structural features which had proved their worth during a period of 300 years if they could be made to fit in with the new theory and practise of arch design which had grown up meanwhile.

Once the designer of the new roof decided to use an arch rib to perform the supporting functions of the old posts or piers which it



The Hall of William Rufus' Palace (completed A. D. 1099).

[Showing conjectured arrangement of timbers' in the Norman roof of Westminster Hall, supposing it to have resembled the roof of Leicester Castle built 51 years later. The walls shown in section actually exist, though leaning outward about 1 ft. and partially refaced with new ashlar in 1822. Note the number of timbers (marked "X") which have their counterparts in the present roof of Westminster Hall. The posts or piers "A A" are omitted from the 1394 roof. "C C" = corbels in 1394 roof inserted in old wall arcade.]

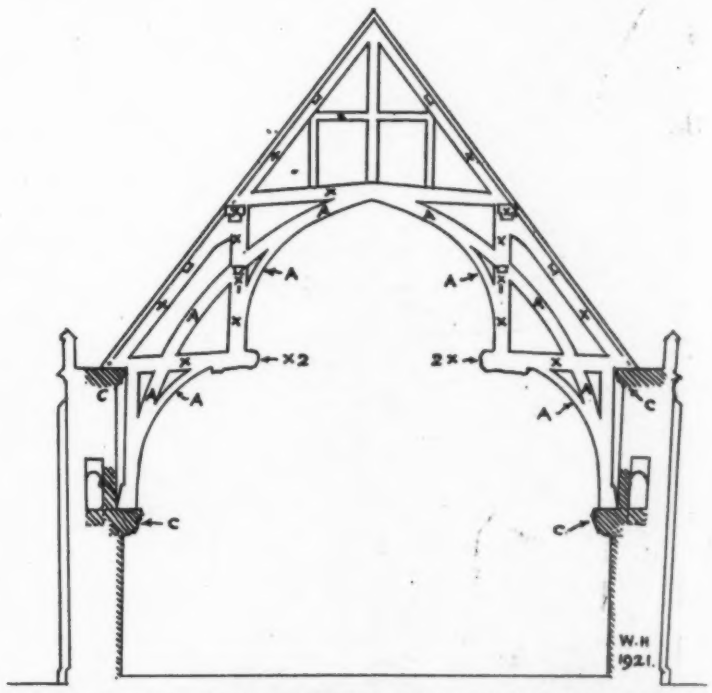
was desired to omit, his attention would turn to the details of construction and the method of putting the great timbers together. Could the new upper timbers be made to rest as steadily upon the sloping haunches of the arch as the old ones had originally stood upon the tops of the posts or piers rising from the floor of the hall? If they could, would their great size and weight be useful or detrimental to the stability of the new roof? Recognising in the arrangement of the old timbers a strong bracket form, the designer seems to have determined to interlace his new arch in such a way that if he copied the old bracket with new material, bracket and arch would mutually support and steady one another. The bracket arrangement, by its tendency to swing inward towards the hall, might be counted upon to modify and direct the outward thrust of the arch rib and still more dangerous thrusts of the principal rafters.

The great genius of the design lies in the position in which the arch is inserted with its haunches passing through the middle of the length of hammer beam and hammer post instead of standing below them and supporting them at their point of junction. Not only does the actual arrangement permit of the beautiful cusped form of the arch, but it embodies the mechanical science of the period in the balance of vertical and oblique thrusts on the principle of the corbel and pinnacle at the base of an arch, or ashlar and projecting bed timber at the foot of a rafter. Leicester Castle roof provides a hint for this position of the great arched rib in that the curved struts under its great collar and the beam connecting the posts to the wall top give to the elevation of the whole framework a slight resemblance to a cusped arch, with its cusps supported upon the posts rising from the floor.

Returning from these conjectures to examine the facts of the case, in Westminster Hall it is found that the timbers can be definitely classed into two groups according to the nature of their joints, some having only small stub tenons and others much larger tenons combined with the use of what are known as "housing" and "halving" joints. All the joints of the great arch rib and the curved struts are of this more highly-developed character, whereas the straight timbers have been provided with smaller and more fragile connections that have in some cases broken away in the course of movements of the timbers taking place in response to their own shrinkage, mechanical action, and wind pressures during five centuries. The nature and dimensions of the jointing throughout point to the design of both groups having been made by the same hand, the greater care, in the case of the curved timbers, being due to the fact that these were an important innovation, while simpler jointing was adopted for the straight timbers for which old precedent existed in almost any roof of post and beam type.

That the designer approached the building of the new roof in this light can hardly be proved, but it is at least as probable that he did so as that he set out to design "the first authentic specimen of the arched hammer-beam roof," or that he viewed his hammer-beams as "parts of a tie beam with its centre part cut away."

An experimentalist wishing to test the functions of a roof truss with a tie (?) beam treated in this manner would do well to confine himself to small models, whereas the conjecture that the new roof was an up-to-date version of the old perfected by the science of arch balance accounts for the experiment having taken place upon a gigantic scale, since only halls of comparatively large span require division into aisles by rows of interior posts the removal of which called into being the new design embodying the great arch ribs.



Westminster Hall Roof as Rebuilt for Richard II in A.D. 1394–9.

[In this drawing the main timbers alone are represented. Timbers marked "A" are all provided with rather more complex jointing than those marked "X," which are only fitted with stub tenons and have their counterparts in the timbers of the Norman roof at Leicester Castle and presumably in the Norman roof replaced by the new work at Westminster. The ornamental capitals ("X 1") and the angels ("X 2") occupy the same positions as ornamental features at Leicester Castle.]

The Northampton Polytechnic Institute.

The new session in the evening courses and classes at the Northampton Polytechnic Institute, Clerkenwell, E.C., will start on September 26, and the day courses and classes a week later. Very substantial additions were made to the equipment during last session owing to a liberal grant by the London County Council, and a further grant has been made by the London County Council which will be expended during the current session in dealing with the most urgent needs. The programme of the work for the new session now resumes its full pre-war aspect. The courses in the Engineering Day College are the full four-year courses. In the evening classes in engineering the regular classes are announced, and short courses of lectures in special subjects will be given during the session

STREET ARCHITECTURE.—II.

QUEEN VICTORIA-STREET AND VICTORIA-STREET.

BY V. M. CHRISTY.

IT is interesting to compare one's impressions of two streets so nearly contemporary in lay-out and so similar in length as Victoria-street in the City of Westminster and Queen Victoria-street in the City of London. Despite these similarities, it is noticeable how very much they differ in their main characteristics.

One of the things that strike one most forcibly in passing along Queen Victoria-street is the amount of care and thought bestowed upon the treatment of angles. A score or more of streets, varying in size, importance, and direction, cut into Queen Victoria-street throughout its length from the Mansion House to New Bridge-street, and the handling of the resulting corners is an interesting study. Almost without exception the angle is treated as a part of the façades to both streets. The greater number are rounded or cut off square, but even where this is not done there is no harsh or abrupt ending. Two special solutions are resorted to, varying in the method of carrying them out. In some cases the angle is treated as a distinct feature, and emphasised by means of a turret or some other vertical effect, to give it individuality. In others it is regarded as a connecting link between the frontages in the two streets. In the latter case it is given a horizontal character by means of continuous bands of ornament, a string course, balcony, or cornice, or else the eye is carried round merely by the continuity of the window line. The whole effect is restful and pleasing, and the buildings are seen as buildings, and not as apparently mere façades. One of the quietest, but at the same time one of the best of these angle treatments, is the corner block on the northern side where Cannon-street is crossed. This building produces a satisfying and yet something of a striking impression, largely because it does not obtrude itself unduly upon the attention, and it has a dignity often lacking in a building of more pretentious materials. Another characteristic of the street is the fact that there are so many blocks complete in themselves, and that the variety of their style rather enhances than detracts from the effect of the street as a whole. It is essentially a London street, and a "City" one too. The many styles and types represented—Gothic, French, Italian, even Moorish types here and there—seem to blend harmoniously. Some stand cheek by jowl with one another and vary greatly in skyline and frontage, high roofs with dormers of the Chenonceaux variety, deep cornices of classic origin, or flat roofs hidden by a parapet. A few stand free between two side streets, complete blocks showing their individuality to greater advantage. There is, however, a tragedy due, one supposes, to the complications of ownership or tenancy, which sadly mars one of these "peninsular" blocks. Here the shop fronts have been cleaned or painted at different times or in different tints, so that the capitals, shafts, and bases on the ground floor have an unhappy pie-bald appearance. A small matter, many may feel. Perhaps so, but it is a small matter which results in marring the block as a whole, for it now has the effect of a complete and well-considered building perched on a ridiculous row of parti-coloured legs. This condition of affairs, here and elsewhere, could surely be remedied without any great amount of trouble to those concerned, and it would restore the architect's design to its proper place without necessarily obscuring the individuality of the shop-fronts.

Soon after Cannon-street is crossed one meets with an old enemy to architectural effect in the shape of clamant and restless lettering which is inclined to distract one from any contemplation of the buildings which it disfigures, and to urge one rather to study the paving or the street curb. With a few quite obvious exceptions the lower part of Queen Victoria-street does not maintain the dignity and quality of the rest. It seems almost as though the street had slowly and painfully realised that it was longer than it had thought at first—a discovery that the pedestrian is apt to make also if he is in a hurry. The flavour of the buildings becomes a trifle insipid. Variety deteriorates into a mere patchwork of dull shapes. The determination to make the most of angles is still there, but it issues in somewhat characterless examples of the two alternatives previously noticed. Possibly the street feels that its reputation is sufficiently sustained by the fact that near by are three Wren churches and the College of Arms. However, it rouses itself for a while and produces successively a couple of fine Italian palaces and a Georgian one ere it loses itself in an indeterminate merging with Upper Thames-street.

Victoria-street, Westminster, seems to set out with a larger ambition than its City namesake, but in the effort it seems scarcely to attain so high a level. There are longer and larger stretches of buildings than in Queen Victoria-street, and there is continuity without dull uniformity. Whatever may be the special characteristics of the individual buildings there is a smoothness about their junction one with another which makes the general impression of the greater part of the street one of repose and suitability. The almost continuous line of balconies, though their level and style vary with each block, links the whole together like an embroidered ribbon tied not so trimly and precisely as to be monotonous. Unfortunately, some of the best of the long stretches of uniform façades are spoilt by the same lack of co-operation with regard to painting that was noticed in the City. But here it is perhaps even worse, since it is not limited to the ground floor only, but whole slices of a building are marked off from the rest by a hard dividing line which spoils the horizontal continuity which should be one of its special beauties.

While the western end of Queen Victoria-street was noticed to become, with certain exceptions, somewhat insipid, the eastern end of Victoria-street (again with obvious exceptions) errs rather on the other side, and tends to lose its calm and appropriately dignified character in an orgy of exaggeration and over-repetition. It is curious also to note how the special treatment of angles, so boldly and successfully undertaken in Queen Victoria-street, is here either shirked altogether or else regarded as a necessary evil. Perhaps the fact

Photo: Aerofilms, Ltd.

Aerial view of Worcester Cathedral.

Memorial Gateway at Crofton Church.—MR. F. HARRILD, M.A., Architect.

that the problem does not present itself so often may partly account for the scant thought it is accorded.

These two streets are at one at least in this: both are eminently "Victorian" in the best sense of the expression, whatever may be their faults. The one is "Victorian" of the City, the other of Westminster.

EXHIBITION NOTES.

The Royal Photographic Society.

Another photographic exhibition has been opened this week—the sixty-sixth of the Royal Photographic Society of Great Britain—at 35, Russell-square. The show is a very good one, both from a technical and artistic standpoint. Not quite so fortunate in its display and setting as the exhibition in Pall-mall, it includes nearly five hundred exhibits, including some so painfully topical as starving Russia. The subjects are varied enough, and yet one wonders why more pictures of the charms of London do not find their way here. One exhibitor certainly shows what may be made out of such a dull subject as a generating station by a striking breadth of treatment (No. 152 by R. C. Banfield); but there seems little else besides Nos. 100 and 51. "In Stately Rome" (No. 172), by the Rev. H. O. Fenton, and "Interior of Pennsylvania Railway Station" (No. 96), by W. Gordon Shields, are good examples of architectural photography. Fine pictures are "Evening Sunlight, Venice" (No. 78), by Louis J. Steele, and "Le Lac d'Estaing" (No. 132), by M. O. Dell; these are lacking little or nothing of the quality of an artist's work. Notwithstanding this, we suppose every large exhibition of photographic prints only serves to emphasise the superior abiding value of the handiwork of the painter. These exhibitions, however, show the large amount of ability increasingly displayed in the artistic handling of photography.

Riccardi Sculpture.

That modern sculpture shows some signs of vigour and individuality more than one recent exhibition has proved. There has been most encouraging evidence that both in vigour and refined sensitiveness of modelling we are getting some remove from smooth convention and uninspired mediocrity. The present exhibition of Riccardi's work at the Leicester Galleries may not give us unalloyed pleasure, but it is arresting in its vigour and sensitiveness. We may forgive the half-length nude figure of a lady in a hat in view of such work as Nos. 25, 34 and 36. The decorative convention in the modelling of the Garibaldi head is very ably done. The portrait of Lady Lavery, the angel's head, and statuette, are attractive subjects, but the figure of "Purity" will be less readily accepted by many critics.

The Late A. W. Rich.

The world of pictures is the poorer by the loss a few days since of A. W. Rich, whose water-colour work at its best was worthy of the English school such as Cotman helped to make it. His broad, simple handling was often masterly and at his best his work was sincere and direct. He was a successful exhibitor, and we suppose he often sold seventy-five per cent. of his exhibits. We should be glad to see many following his earnest efforts to summarise the beauties of English landscape, for his were the sort of pictures to live with. The pleasant exhibitions of his work at the Walker Galleries will be missed.

Old London Bridge.

One of the arches of old London Bridge, which was recently discovered when excavating for the foundations of a new building at Adelaide-place, London Bridge, has been offered by the Architect of the London County Council to the Bermondsey Borough Council, which proposes to erect and preserve it on a site in Southwark Park.

MEMORIAL GATEWAY AT CROFTON CHURCH.

THERE is no consecrated burial-ground at the little church of Crofton, Kent, so that a lych-gate is not required, and the memorial has taken the form of an entrance gateway and wall along the road on which the church stands. The gateway is build of Kentish rag stone and English oak, and the tablets with the names of the fallen are of Hopton-Wood stone incised and leaded. The curved beams in the front are pinned to one another and to the stone base at their lower ends, and again to one another and to a diagonal cross-tie at their upper ends, this cross-tie running through the centre post and supporting the further corner. It is hoped to insert a lantern beneath this corner at some future date. The memorial has been erected by relations and friends of the men of Crofton who gave their lives for their country.

The design is by Mr. Fred Harrild, M.A., of Orpington, Kent, and Totnes, South Devon. The work was carried out by Messrs. Treasen Bros., of Crofton and Bickley, Kent.

Restoration of Prittlewell Priory.

Considerable progress is being made with the work of restoring Prittlewell Priory, which Mr. P. M. Johnston, architect, is supervising for the Southend-on-Sea Corporation. Mr. R. A. Jones has offered to present a monument for erection in the centre of the cloister garth in memory of the monks of Prittlewell, and this offer has been accepted. The stone fireplace from the hall is being re-erected in the Prior's Chapel. It is intended to use the Priory as a museum, and the Library Committee of the Corporation recommends that local antiquities be exhibited in the domestic rooms at the south-west corner of the buildings, and that the Refectory and Prior's Chamber be refurnished as far as possible in accordance with the inventory taken at the time of the Dissolution. It is intended to communicate with the authorities of South Kensington Museum with regard to a loan of furniture.

XVIth-CENTURY DANISH ARCHITECTURE.

By Georg Brochner.

Whilst many a small English town and in many districts the countryside, too, boast a number of well-preserved buildings from the sixteenth century, in some cases earlier, buildings of such venerable age in Denmark are mostly to be found amongst the seats of noblemen and amongst present or former royal residences. These two groups of buildings, however, comprise many structures of great distinction.

The illustrations in this issue are very good specimens of a type, in some respects, at least, peculiarly Danish. They date from about the middle of the sixteenth century, and are undoubtedly more the outcome of conditions which had previously prevailed, and which it was apprehended again might arise in the country, rather than inspired by the Renaissance style, which was beginning to assert itself at the time in other parts of Europe. There had been very serious upheavals of the peasantry and protracted disturbance in Denmark, and the noblemen found it advisable to let these considerations greatly influence the plan and construction of their residences, the defensive nature of which was rather calculated to resist a more or less ill-equipped peasant revolt than to serve as a stronghold in a strictly military sense. They were thus, in a way, really behind their time, based on ideas otherwise already antiquated and exploded.

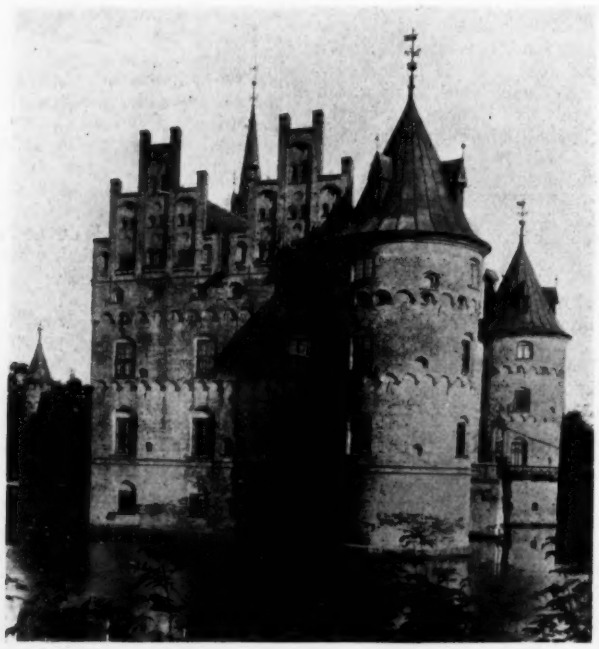
Water played an important part in the defensive scheme of these castles or halls. They were not infrequently built right against a lake or sometimes on piles actually in a lake, and the moat often surrounded not only the residential hall itself, but also a number of auxiliary buildings and outhouses. These somewhat mediæval castles generally comprised four wings—a main wing, with a corresponding opposite wing, and two shorter wings, in most cases with foundations of granite, the material otherwise being red brick. They are stately and dignified edifices, the special architectural decorative features of which are a frieze of rounded arches between the first and the second story, allowing the latter to project a few inches; a second similar frieze of rounded arches above the second story, allowing the low or half-story above to project about the length of a brick; and the step-like gables, which are a reminiscence from the Gothic period (also perpetuated in a number of churches to be found all over Denmark). This projecting, low top story was an important—one might almost say, a vital—feature, inasmuch as it contained openings both for shooting and for pouring boiling liquids, &c., on to the enemy, should he succeed in forcing his way right against the house. Inside this half-story was a "watchman's corridor" the whole way round. Projecting corner towers of different sectional shape enhanced the defensive strength of the complex, the front walls of which were often more massive than those facing the courtyard. The architectural features of the main building were generally repeated in the towers, which also had holes and openings for shooting and "scalding." The basement had an arched ceiling, still preserved in most cases, as had also the rooms in the towers, and sometimes the rooms in the first story, whilst the second story, often forming one large dancing or banqueting hall, had a flat ceiling resting on oak beams.

A peculiar feature was the placing of the entrance or access, which was never from the front, but through a tower at the back with a narrow winding staircase, the door being on the side, all with a view to strengthening the defence. The roof was conic or otherwise according to the sectional plan of the tower. If any traces of Renaissance influence were to be found anywhere they were confined to interior arrangements—fireplaces, for instance.

Egeskov, in the island of Fuhneu, rich in halls of this description, was built by a member of the noble family of Brokkenhus, his Christian name being Frants. One of the buildings bears the date 1554. Egeskov is an example of the mode of building on piles in a lake. Its plan is rectangular and there is a square staircase or entrance tower on the back side, whilst the corner towers are round, with a conic roof. This handsome hall possesses all the architectural features mentioned as peculiar to this group of castles.

Rygaard, also in Fuhneu, is probably somewhat older, at least as far as the main wing is concerned; the other three were undoubtedly added later. The former has the same characteristics as Egeskov, and is the only portion with arched basement. The staircase tower, at the back, is round, and there is another in one of the corners of the court-yard.

Sixteenth-Century Danish Architecture: Rygaard.



Sixteenth-Century Danish Architecture: Egeskov.

HARVARD UNIVERSITY SCHOOL OF LANDSCAPE ARCHITECTURE.

We have received a copy of the "Official Register of Harvard University," which shows that during the last twenty years Harvard University has included a School of Landscape Architecture in its curriculum, and at the present time offers a very complete and special 2½-year course of study leading to the degree of Master in Landscape Architecture. The School has already been endowed with several valuable fellowships and scholarships, both resident and travelling, one of which, the "Charles Eliot Travelling Fellowship," carries a stipend of 1,200 dols. for travel and study under the direction of the Chairman of the Council of the School. Graduates of the School of Landscape Architecture are also eligible to compete for the Prize of Rome of the American Academy in Rome offered by the American Society of Landscape Architects. This prize gives to the successful candidate the privilege of residence in the Academy in Rome and of work in Europe under the direction of the Academy for three years. Intending competitors must be American citizens and graduates of schools of landscape architecture recognised by the Academy.

The aim and function of the School is to create and preserve beauty in the efficient adaptation of land to human service, whether in the functional planning of cities or in the development or preservation of the broader natural scenery of the country. A course in drawing, principles of construction, landscape topography, and landscape design enables the student to practise the constructive side of his art.

The whole subject is of profound importance, and until its principles are generally understood works of architecture, fine in themselves, will continue to suffer from incongruous arrangement.

Leading Contents.

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ILLUSTRATIONS.

Hammersmith Housing Scheme.

Our illustration of the Hammersmith Housing Scheme is from the exhibit at this year's Royal Academy Exhibition. Mr. Matthew J. Dawson, F.R.I.B.A., is the architect.

Danish Architecture.

The illustrations of sixteenth-century Danish architecture are given in connection with an article by Mr. Georg Brochner on p. 378.

Officials' Houses, Near Port Talbot.

This pair of houses has been erected as part of a large housing scheme for Messrs. Baldwins, Ltd., at Margam, Port Talbot, South Wales. They face south-west and are built of local brickwork of uneven colouring, with cavity external walling. A proportion of smooth white rendering is introduced where shown, and the roofs are covered with thick, irregular local slates. The architects for the whole scheme are Messrs. Ewart G. Culpin & R. S. Bowers, of 27A, Bush-lane, E.C. 4.

A Group of Cottages.

The cottages illustrated form a design for general use on housing schemes with which the architects are concerned. They form a group of a simple and economical nature, and are now being built as a group of six, *i.e.*, on one side of the road only, on the Margam township of Messrs. Baldwins, near Port Talbot. The plans as shown, forming a complete quadrangle, are intended for the Sentinel Garden Suburb at Shrewsbury, where radiators are being provided. This latter fact accounts for the small number of fireplaces shown, but these can easily be increased for use under normal circumstances where central heating is not available. Messrs. Ewart G. Culpin & R. S. Bowers, of 27A, Bush-lane, E.C. 4, are the architects.

House at Culloden, near Clipstone, Notts.

The site of this house is in a clearing of Sherwood Forest, near Clipstone and Edwinstowe, and only a small portion of the garden was laid out when the photographs were taken in the early summer of 1914, soon after the buildings were completed and occupied. The vestibule, lobby, hall, and staircase are panelled with English oak, and the staircase is of similar oak. The drawing-room and morning-room are panelled with deal, painted white. These rooms are divided by a movable panelled partition in sections, so that they can easily be thrown into one room for dancing, &c., for which the floor, of narrow boards, secret-nailed, is specially prepared.

Messrs. A. Eastwood & Sons, of Warsop, were the builders, and Mr. Louis Ambler, F.S.A., F.R.I.B.A., of Temple Chambers, Temple-avenue, London, E.C.4, the architect.

MEETING.

WEDNESDAY, *September* 28.

Glasgow Housing Exhibition.—Mr. H. A. Cox, F.C.A., on "London in the Time of Henry VIII" (illustrated by lantern slides of drawings by the late H. W. Brewer). At Kelvin Hall Glasgow. 7.30 p.m.

The Bartlett School of Architecture.

A series of evening courses in Design and Academic Design will be held at the Bartlett School of Architecture, University College, University of London, during the Session 1921–22. The courses will be held on Monday, Wednesday and Friday evenings from 6 p.m. to 9 p.m., beginning on Monday, October 3. These courses are arranged in order to encourage the study of design among students engaged in offices during the day. Periodical lectures will be given on the principles governing the design of all types of modern buildings, special attention being given to conception and planning. Professor A. E. Richardson, F.R.I.B.A., will supervise the courses, and will attend one evening a week to criticise the designs. Full particulars of the courses and of the atelier for the study of advanced architectural design can be obtained on application to Mr. Walter W. Ston, Secretary, University College, Gower-street, W.C. 1.

Extension at Barclays Bank, Thornton Heath.

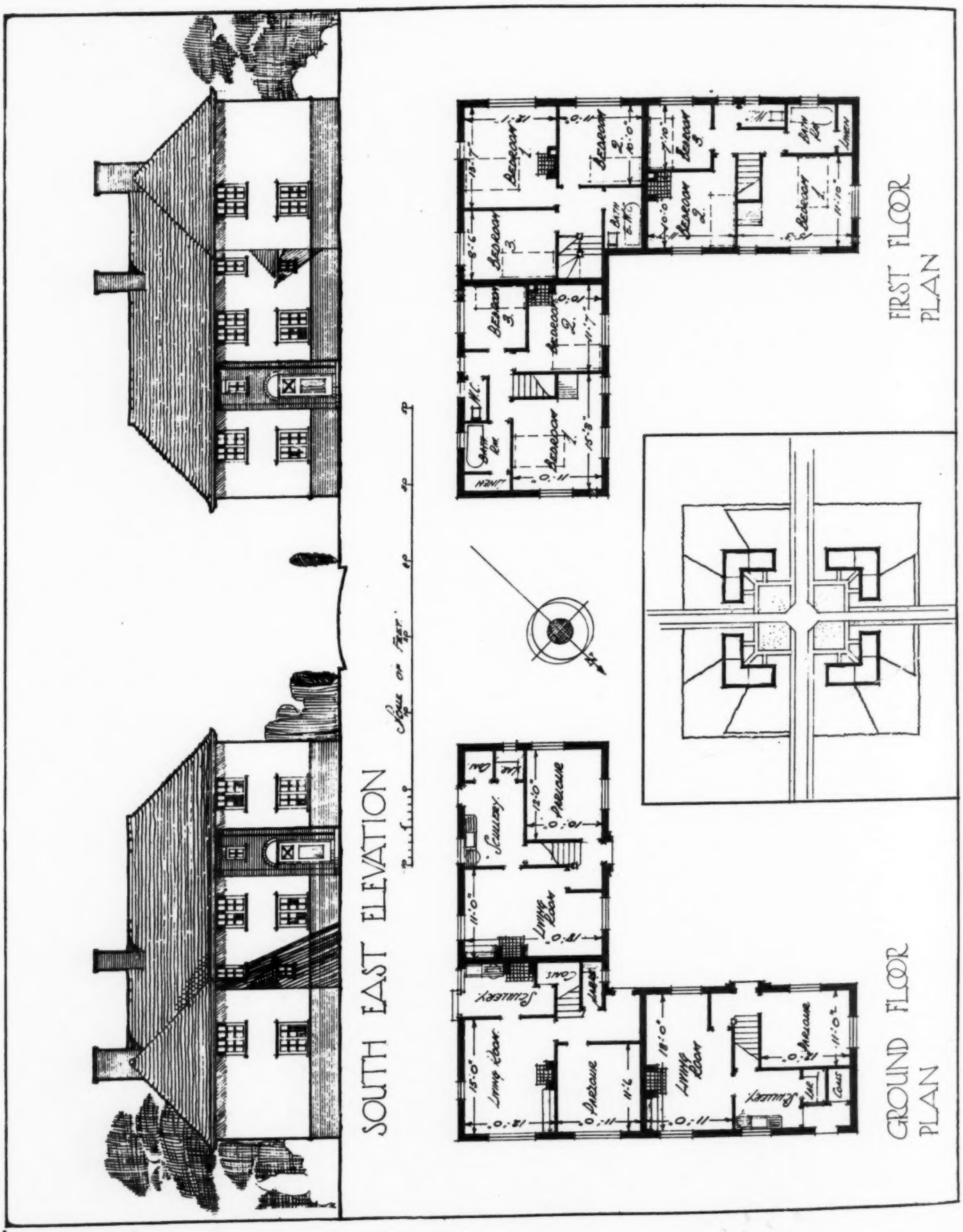
MESSRS. BOURCHIER, TATCHELL & GALSWORTHY, Architects.

[This illustration shows the recent extension at the premises of Messrs. Barclays Bank, Ltd., Thornton Heath. Messrs. Truett & Steel, Ltd., of Thornton Heath, were the general contractors, and also supplied the fittings.]

GARDEN FRONT.

ENTRANCE FRONT.

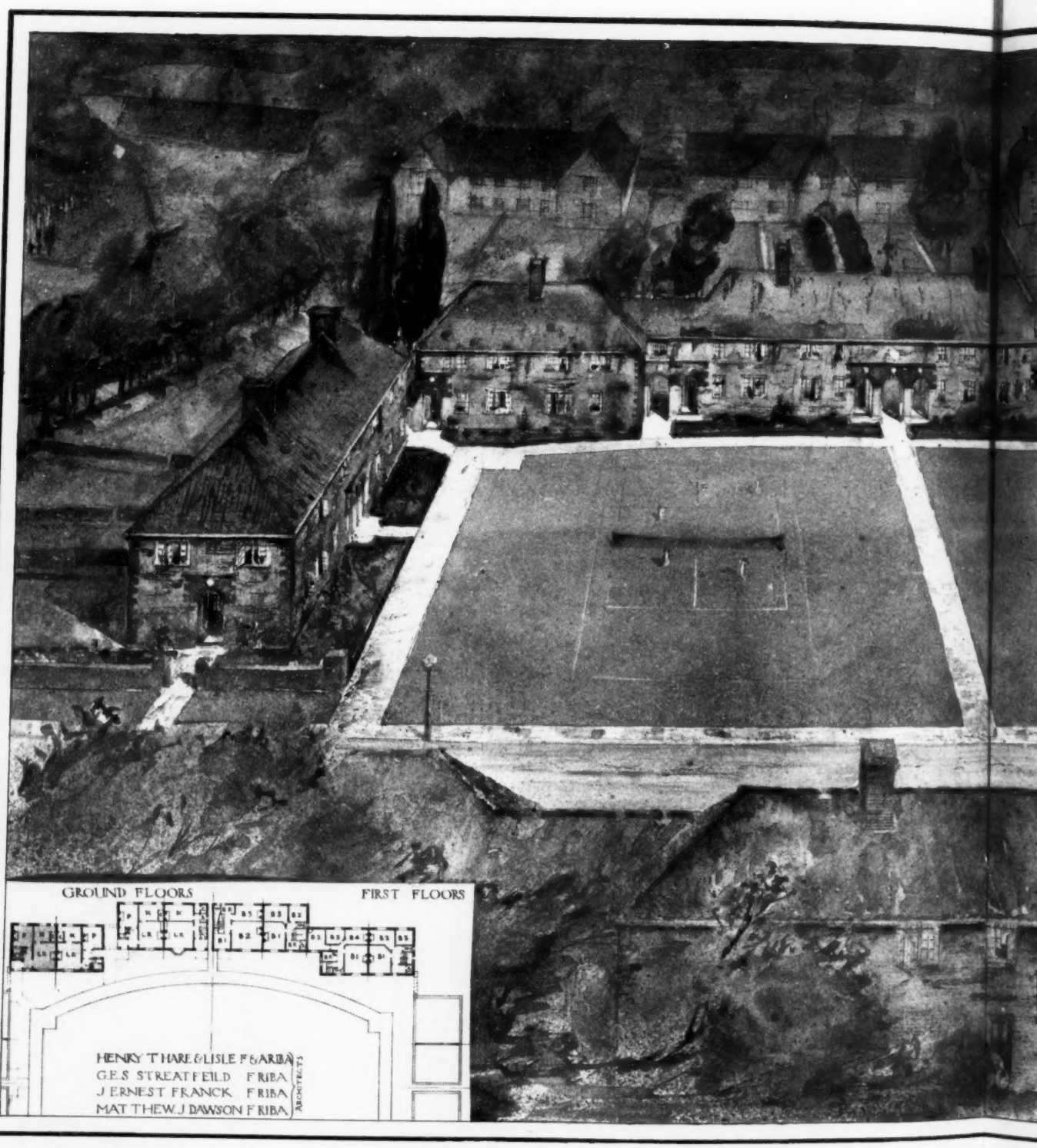
House at Culloden, near Clipstone, Notts.
MR. LOUIS AMBLER, F.S.A., F.R.I.B.A., Architect. (*See p.* 379).



DESIGN FOR A GROUP OF COTTAGES. BY MESSRS. E. G. CULPIN & R. S. BOWERS.

DESIGN FOR A GROUP OF COTTAGES. BY MESSRS. E. G. CULPIN & R. S. BOWERS.

PLAN

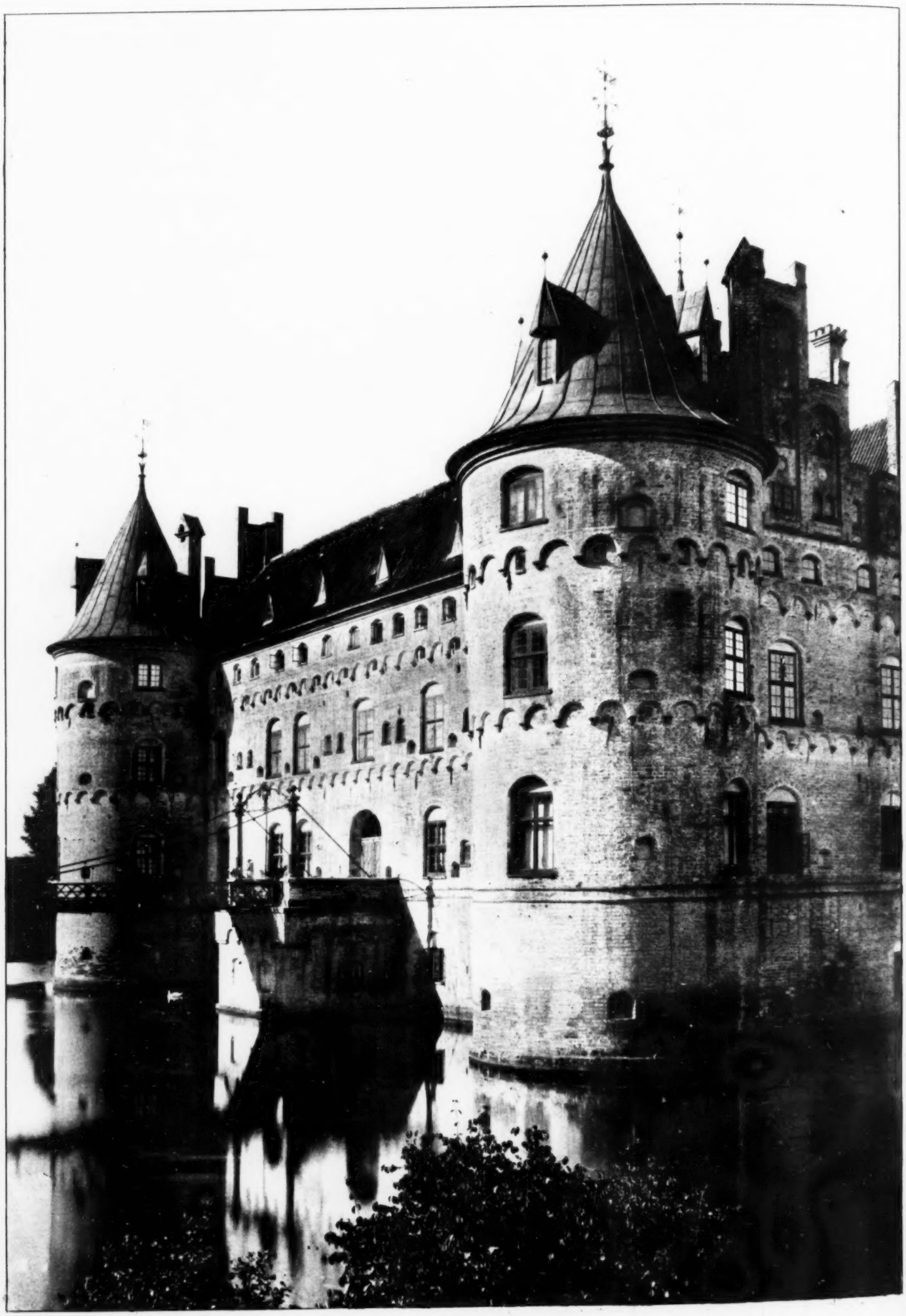

GROUND FLOORS
FIRST FLOORS
HENRY T HARE & LISLE F & A R I B A
G E S STREATFEILD F R I B A
J ERNEST FRANCK F R I B A
MAT THEW J DAWSON F R I B A
ARCHITECTS

R.A. EXHIBITION.

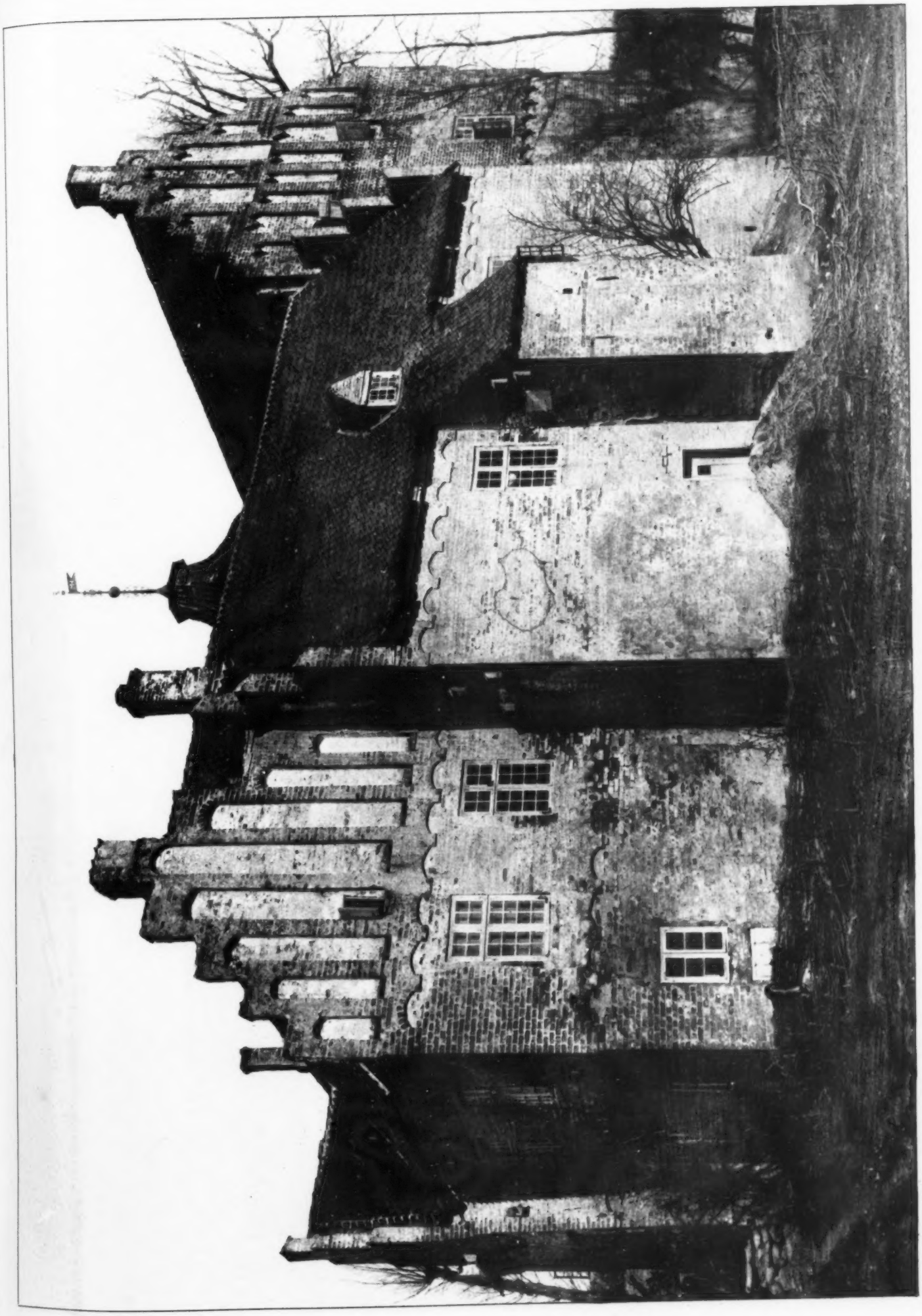
HAMMERSMITH HOUSING SCHEME. MR. MATTHE

If all the carts were painted gay
And all the streets swept clean
And all the children came to play
By hollyhocks with green
Grasses to grow between.

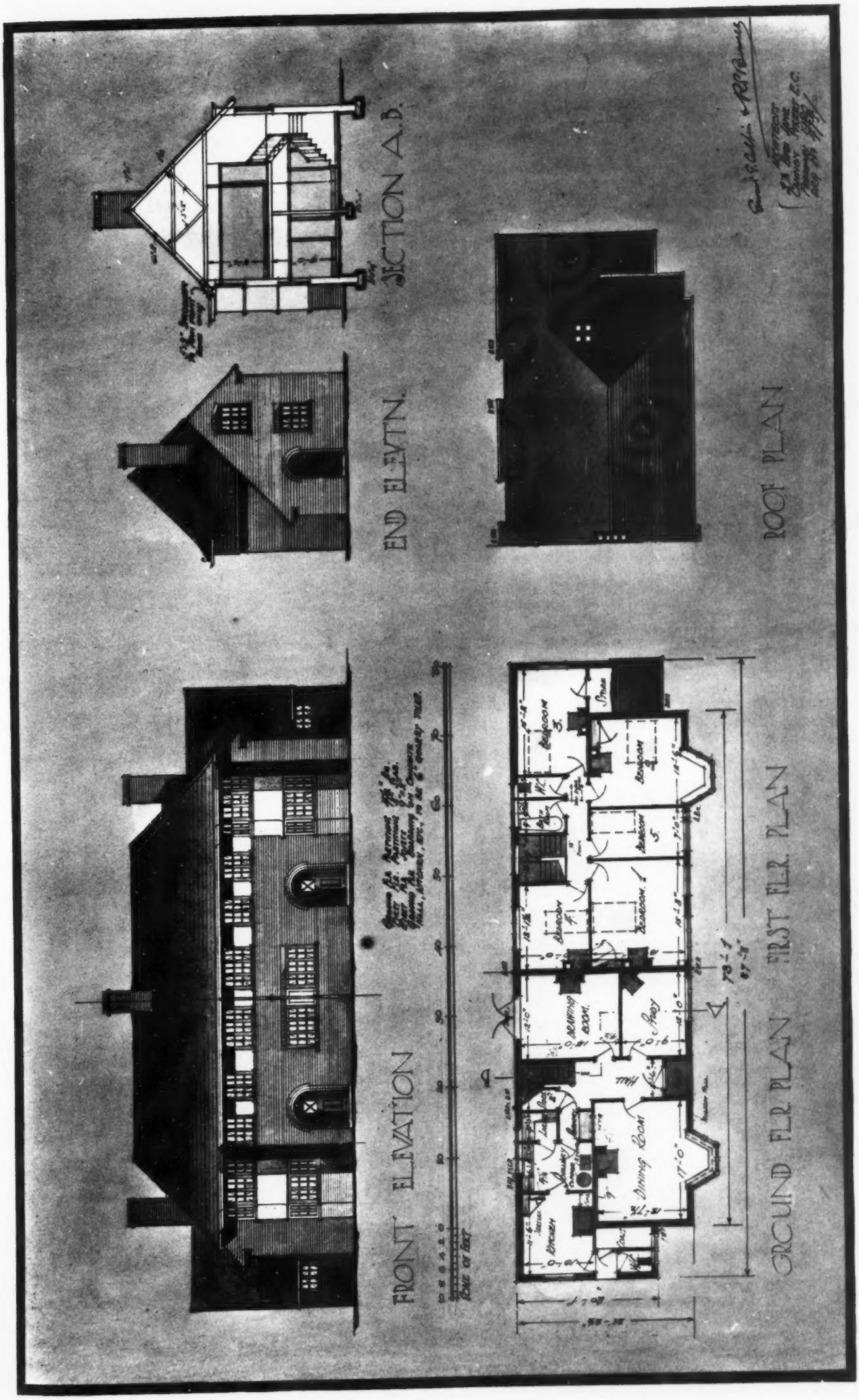
CHEME. MR. MATTHEW J. DAWSON, F.R.I.B.A., ARCHITECT.



SIXTEENTH CENTURY DANISH ARCHITECTURE: EGESKOV.



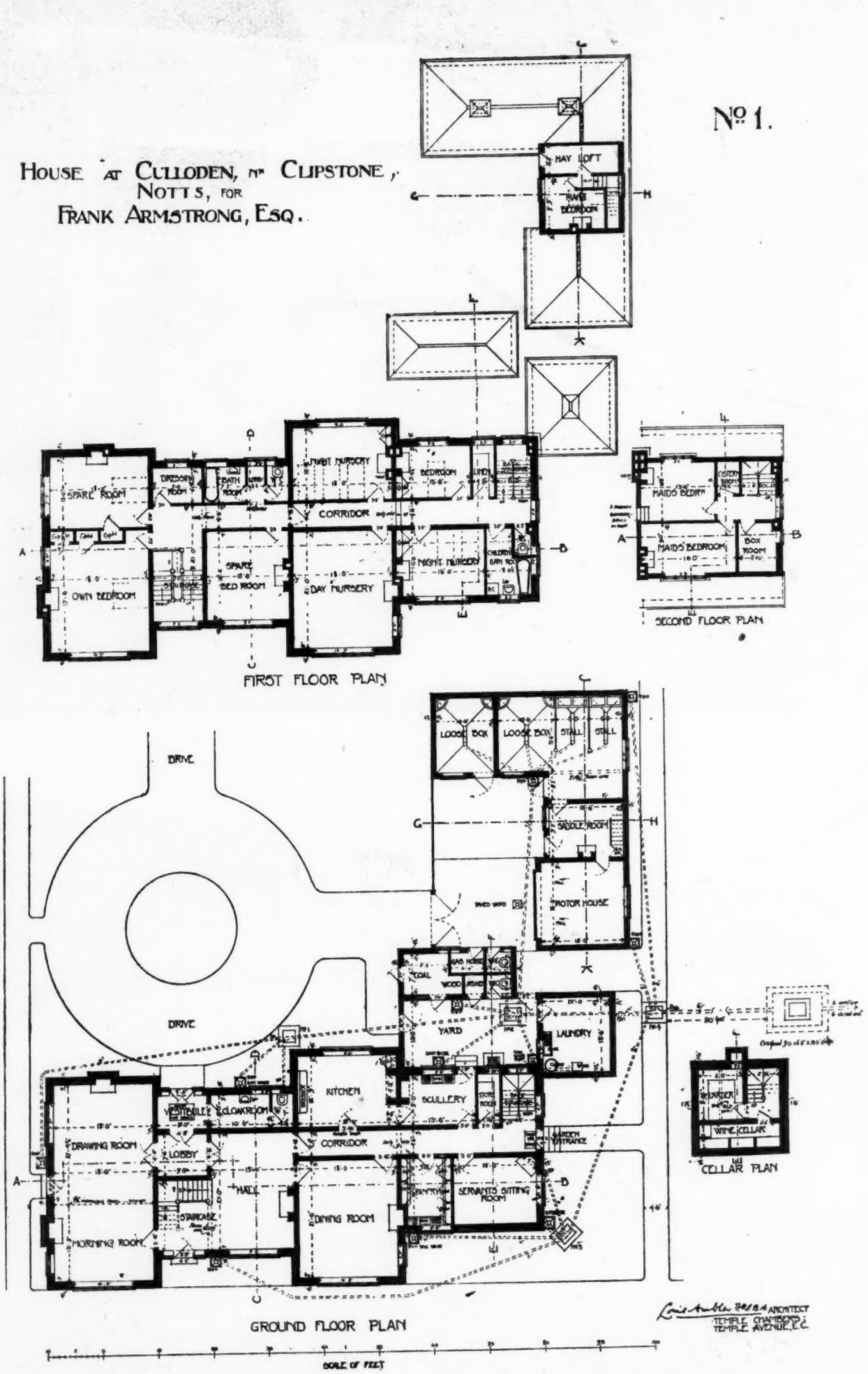
SIXTEENTH CENTURY DANISH ARCHITECTURE: RYGAARD.


END ELEVTN.
SECTION A.B.
ROOF PLAN
FRONT ELEVATION
GROUND FLR. PLAN
FIRST FLR. PLAN
Bedroom
Bedroom
Bedroom
Bedroom
Bedroom
Dining Room
Kitchen
Larder
Scullery
Lavatory
Bath
Linen
Pantry
Store
Boiler House
Coal
Ashes
Dustbin
Entrance Hall
Lounge Hall
Study
Cloaks
Lavatory
Bedroom
Bedroom
Bedroom
Bedroom
Bedroom

House at Culloden, near Clipstone, Notts: Entrance Hall and Staircase.
MR. LOUIS AMBLER, F.S.A., F.R.I.B.A., Architect. (*See p.* 379).

No 1.

HOUSE AT CULLODEN, nr CLIPSTONE, NOTTS, FOR FRANK ARMSTRONG, ESQ.



MR. LOUIS AMBLER, F.S.A., F.R.I.B.A., Architect. (*See p.* 379).

BOOKS.

Homes of the Past. A Sketch of Domestic Buildings and Life in England from the Norman to the Georgian Age; with a Proposal for Preserving certain Typical Houses, each to be furnished as an example of its Own Time. By W. H. HELM. With 59 Illustrations by A. C. Chappelow. London: John Lane. Price £2 2s. net.

The quotation placed by the author upon the fly-leaf of this book sums up both his immediate propaganda and the real interest of archæological research in general—

"Whatever withdraws us from the power of our senses; whatever makes the past, the distant, or the future, predominate over the present, advances us in the dignity of thinking beings."—JOHNSON, *Western Islands.*

A kind of reverence for the works of a past age seems to be a necessary part of the mental equipment of thinking men, particularly of those whose critical perception renders them painfully conscious of the incongruity of many elements of modern life. The pathetic belief in the reality of the "good old times" can never be wholly eradicated from human beings suffering the inevitable distresses of their present time, and whoever entices them into the golden world of the past to take holiday there for an hour or a day is to be praised and thanked.

Readers of Mr. Helm's book, even if they are not altogether in sympathy with his proposal to conserve certain old houses as national memorials, will certainly find a joy in revisiting the homes of the past in his company, for the particulars he gives amplify and deepen the impression received from those writers—Chaucer, Shakespeare and Sir Walter Scott among the rest—who have already directed their interest upon historical scenes of domestic life. The examples illustrated in the book are well chosen and the descriptive text makes pleasant and convincing reading, exhibiting a genuine acquaintance with ancient architecture and construction. Whenever repair or necessary restoration comes under discussion the author handles the subject in an admirable manner, making conservation the keynote of his proposals. In referring to an inserted window in the Norman house at Boothby Pagnell, Lincolnshire, he says: "The large window of the first floor, which lights the principal room, or hall, is obviously of very much later date than the house as a whole. Its Tudor style may be somewhat discordant with the Norman doorways, but it is, perhaps, more satisfactory that an architect called in to make alterations in an old building should thus clearly mark his work and period, rather than confuse posterity by copying the style of an original architect of the far past. Even a modern Perpendicular window in a Norman church is sometimes less deplorable than a modern 'Norman' window in one of those unfortunate buildings in which the original windows have been restored till they look brand new." Again, in describing the beautiful thirteenth-century Wenham Hall he marks his approval of restraint on the part of the restorers who have done merely what was necessary to put the place into excellent structural condition.

In the tenth chapter the author develops his proposals for the maintenance for the public of some such old-world houses under a national scheme, and suggests that "it is not improbable that one or more of the houses required would be given out of full sympathy to such a body as the National Trust, or the Society for the Protection of Ancient Buildings."

In Appendix A, "The Domestic Hygiene of our Ancestors," some interesting side-lights are thrown on the absence of bath-rooms and the limited facilities for washing in olden days, but the author may possibly exaggerate the state of personal uncleanness of our ancestors. Anyone who has seen how clean an Arab can make himself by the use of a few handfuls of water will realise that the cleaning action depends rather upon the systematic use of a little water than upon the lavish waste of larger quantities.

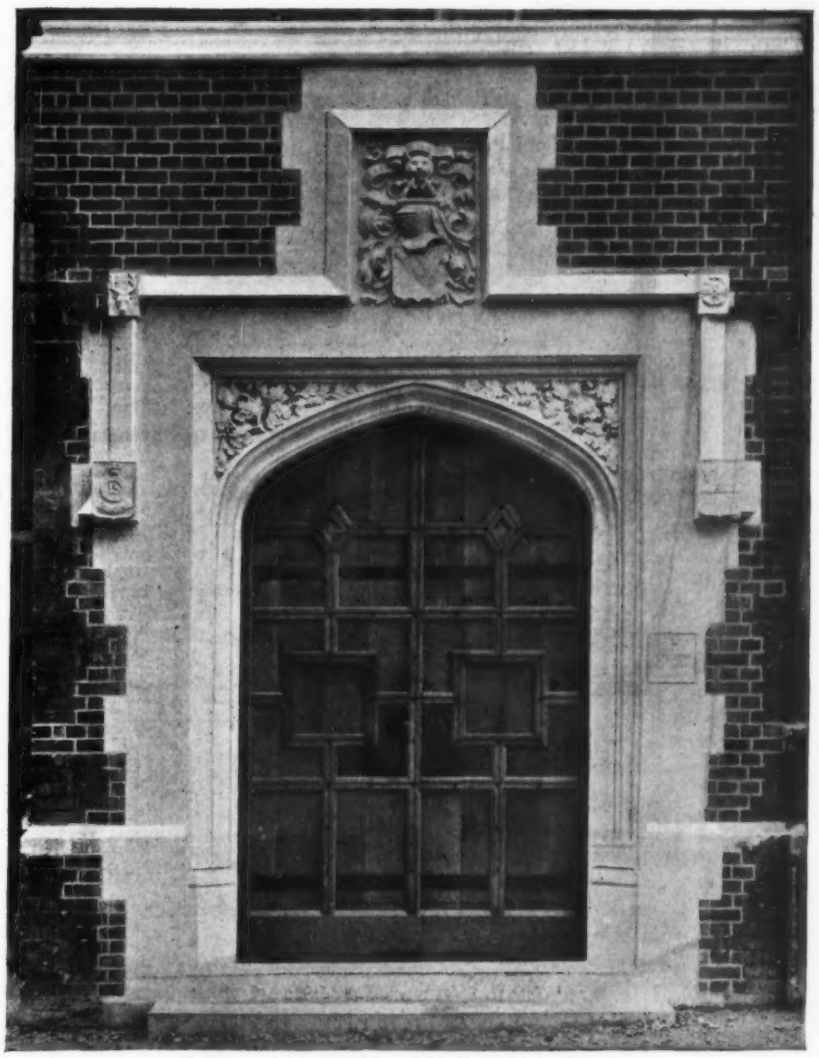
Appendix B contains the text of the English "Ancient Monuments Consolidation and Amendment Act, 1913," and Appendix C its French counterpart, "*Loi sur les Monuments Historiques*, 1913." This is a more far-reaching affair altogether, armed with severe penalties in the shape of fines and imprisonment for whoever shall have destroyed, broken down, mutilated, or debased an immovable or a movable object classified under the law. Negligent guardians are also subject to imprisonment for from eight days to three months and from 16 to 300 francs fine, or to one of these punishments alone. Purchasers and exporters of classified objects expose themselves to a fine of from 100 to 10,000 francs and to imprisonment from six days to three months. Compared with the French, our national interest in ancient monuments is decidedly limited in extent, and would remain so even if, as is to be hoped, the proposals of the author for the nationalisation of some ancient dwellings were to materialise in actual fact. On the other hand, the public bodies responsible for the care of our ancient monuments have developed since 1913 a very good system of conservation without undue restoration, and in this respect—though necessarily subject to continued criticism on points of taste or discretion—possibly take precedence of the French who often favour the drastic treatment which remained too familiar with us until recent years.

The illustrations of the book, executed from the careful drawings by Mr. A. C. Chappelow, admirably perform their purpose, and the plentiful use of cross-hatching gives them, in comparison with the dashing mannerism of so many modern artists, an honest old-world appearance truly in keeping with their subject.

BUNBURY MEMORIAL DOOR, EASTBOURNE COLLEGE.

THE entrance door to the new buildings at Eastbourne College has been erected as a private war memorial to the memory of Captain G. H. St. P. Bunbury, I.A., and bears an inscription to this effect. The work was designed by and carried out under the supervision of Mr. Geoffrey C. Wilson, A.R.I.B.A. (himself an old Eastbournian), one of the partners in the firm of Messrs. Bourchier, Tatchell & Galsworthy.

The contractors were Messrs. Mark Martin & Sons, builders, of Eastbourne. The stone carving was executed by Mr. George Alexander. The arms above the door are those of the Bunbury family with the school crests on each side, and the school arms and regimental crest of the 15th Sikhs, to which regiment Capt. Bunbury belonged when he was killed in action, below. The oak-leaf carving in the spandrils is symbolical of the Sussex Weald. The doors are of English oak and the wrot iron hinges and furniture were made by Mr. W. Bainbridge Reynolds.



The Bunbury Memorial Door, Eastbourne College.
MR. GEOFFREY C. WILSON, A.R.I.B.A., Architect.

The Manchester Society of Architects.

The Kalendar of the Manchester Society of Architects for the year 1921–22 contains a complete resumé of the work of that body during the past year. The membership now comprises 125 Fellows, 116 Associates, and 72 students. The success which attended the three public lectures organised by the Society and the Institute of Builders is referred to, and it is announced that a similar series is to be held this winter. The Kalendar contains the names of the officers and members.

GLASGOW HOUSING EXHIBITION.

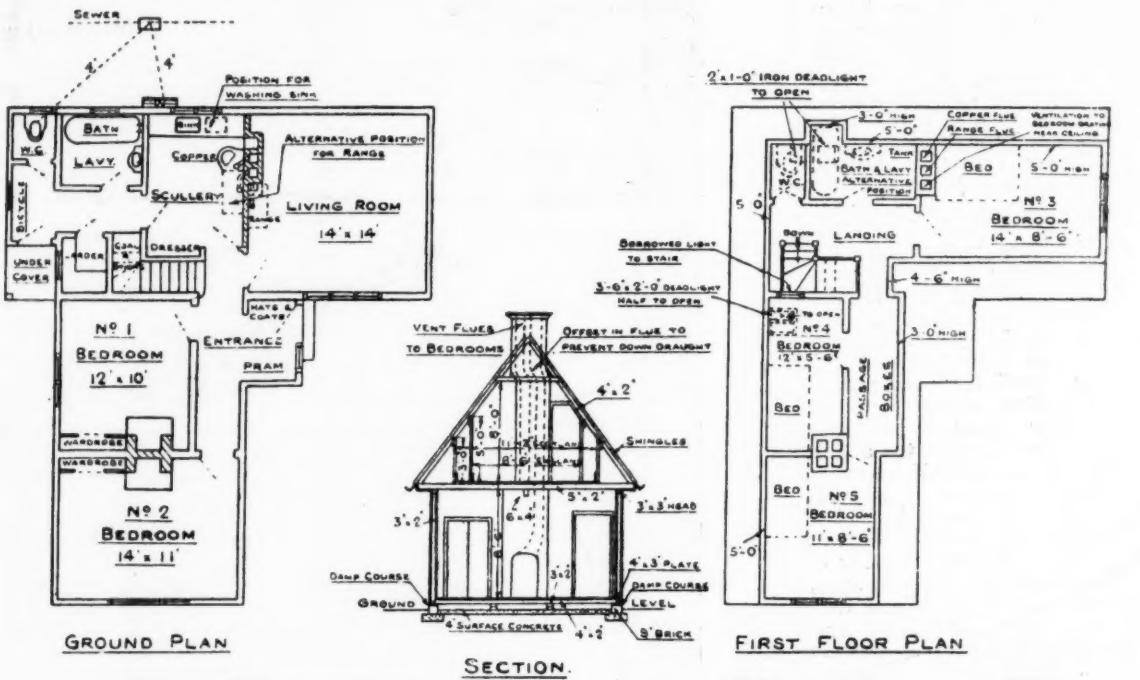
THE OPENING CEREMONY.

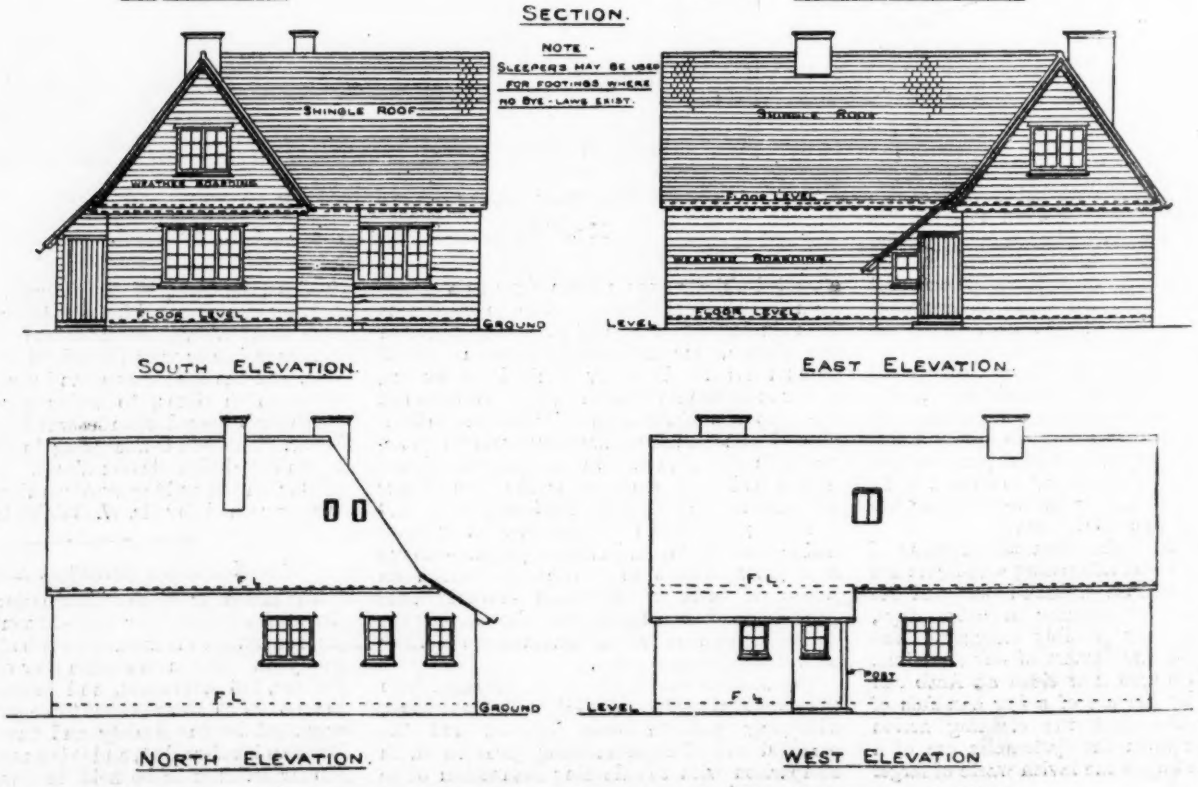
THIS year the Corporation of Glasgow has again promoted a well-organised exhibition for the purpose of helping on the solving of a most vital and national question, namely, the provision of houses.

On Monday, September 19, the Ideal Homes Exhibition in Kelvin Hall was opened to the public by the Right Honourable the Lady Blythswood. There was a large attendance of the public at the opening ceremony, and on the platform were Lord Provost Thomas Paxton; Lord and Lady Blythswood; Sir John Lindsay (Town Clerk of Glasgow); Councillor William B. Smith (Convener of the Glasgow Corporation Exhibition Committee); and many other well-known citizens.

In opening the proceedings, the Lord Provost congratulated the Committee on the enterprise shown in its previous exhibitions, and expressed his confidence that the present event would not be one whit behind the others either in interest or success. The subject of housing was one that was very prominently before all classes at the present time, and he felt certain that the exhibits would teach many lessons in connection with the housing question. The Glasgow Corporation had recently formally inaugurated its housing scheme, and was looking forward to these houses becoming models of what houses should be. They certainly would be models if those who occupied them introduced all the labour-saving appliances shown at the Exhibition, and from that point of view the present exhioition was most appropriate and opportune.

Lady Blythswood, in declaring the Fxhibition open, said the exhibitions held in that Hall had been the means of attracting the attention of the citizens to various phases of industrial enterprise, and to the resources of the British Empire in coping with the new conditions which had been created by the war. She thought no exhibition would appeal more to every class of the community than the one which was then being opened, because everything that appertained to the building of houses and to the better equipment of the dwellings of the working classes was of the most vital interest to the nation. The success of the Empire lay in its home life, and the more facilities that were offered for satisfactorily coping with the domestic problems, the better it would be for the country at large. Within recent years a new appreciation had arisen of the potentialities of home life and the value of hygienic and sanitary appointments, combined with the introduction of labour-saving methods in heating, cleansing, and lighting. The Government was at last realising what the population required in the provision of suitable and comfortable homes. It was for the purpose of showing the people of Glasgow that a movement was on foot to provide better homes and of faithfully portraying the various improvements of recent years that the Cor-





House Constructed of Home-Grown Timber.—MR. FRANK SHERRIN, Architect.
[Exhibited at the Glasgow Housing Exhibition.]

poration of Glasgow had promoted the Ideal Homes Exhibition.

The last exhibition held in the Kelvin Hall was called the Housing and Health Exhibition, but it was thought that the re-naming of the enterprise would more comprehensively cover its general scope of ideals. Altogether there are represented on the present occasion no fewer than 156 firms, and practically all the available floor space is occupied.

THE STANDS.

Much ingenuity and ability is shown in the decoration of the large hall. This is laid out in a series of avenues and the stands are uniform in design—white woodwork and black sign lettering—so that the exhibition presents an attractive spectacle. The various exhibits are classified under the headings of building materials, furnishings, lighting, heating, labour-saving and cleaning appliances, sanitary appliances, decorations, &c., but it can scarcely be said that some of these sections are important enough thus to be sub-divided.

The different stands occupied by firms in the building and allied trades are fairly well distributed throughout the various avenues, but it is noticeable that a goodly number of the exhibitors in these spheres of activity at previously-held fairs are not represented on the present occasion. On the other hand, however, several additional firms in these trades are showing their different specialities.

The exhibition contains all the features necessary to stimulate the interest of the intelligent visitor. To the public, in its essentially domestic character, the exhibition to a large extent appeals more particularly to the women-folk, but the interest of the male visitor has by no means been overlooked. To builders and architects there is abundance of food for thought; many of the exhibits will add to their store of knowledge, and will be of value in solving many of the problems of domestic planning.

Almost every visitor will make a special point of seeing the two model cottages, which occupy a corner of their own. One is built of concrete blocks, and the other of Scottish-grown timber, specimens of which, direct from the forest, are also shown. The former has been erected by Messrs. McLaren, Gilbert & Co., Glasgow, and is constructed of artificial stone-faced blocks. The cottage consists of two rooms and kitchen, bathroom and scullery, and can be enlarged to provide a four-room and kitchen house. The blocks are easily made, and in an adjoining stand machinery has been erected for the purpose of showing the process of manufacture.

To the builder and the architect the most interesting exhibit is perhaps the timber cottage; it is certainly one which will be subject to close examination, criticism, and argument. The cottage has been erected by Messrs. James Jones & Sons, Ltd., of Larbert, Stirlingshire, and reflects great credit on their enterprise. The principal object of the exhibit is to push the sales of home-grown timbers. It demonstrates the possibilities of wood in house construction and the suitability of home timber for the purpose. The weather-boarding, joists, partition timber, flooring and lining are of larch, which is very hard and may be claimed to be the least inflammable of coniferous woods. Windows, doors, ornamental mouldings, &c., are of Scots fir, and the shingles, roof-boarding and some linings are of spruce. One of the chief features of this house is its wooden tiles, or shingles. Hitherto shingles have scarcely ever been used in Scotland, perhaps because people have not really thought about them, perhaps because they seem too light for the rigorous climate of the North, and so slate, clay tile, and other damp-proof materials have been adopted as representing the best available roof covering. Much may be said for the new method, however, for while shingles may be light for a low-pitched roof, yet there is no fear of injury in a storm such as might occur with slates or tiles.

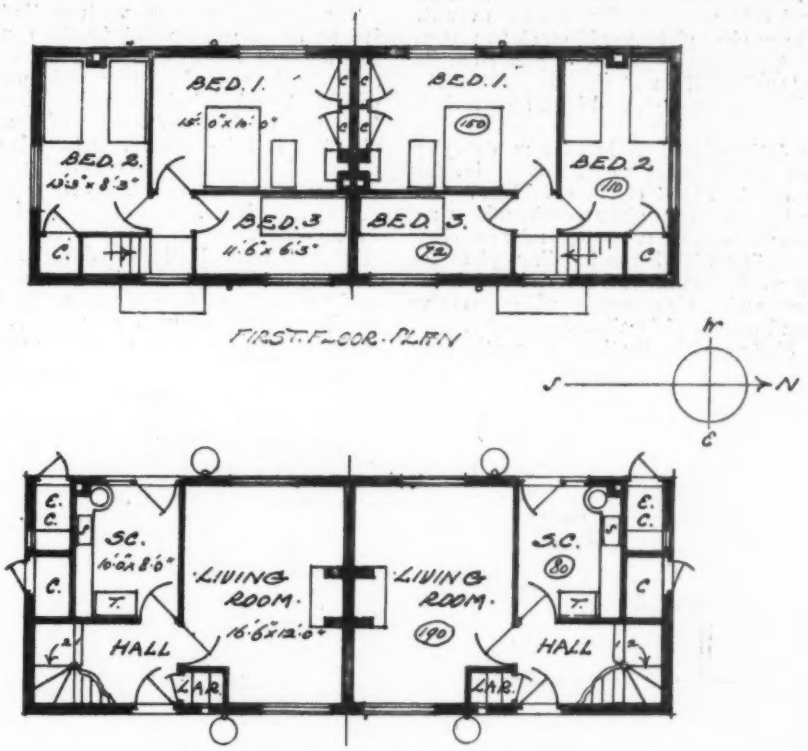
At first sight the colour of the red-stained shingles appears a little garish, but no doubt in time this would tone down to the colour of the old English tile. A commendable feature in the lightness of the shingles is the saving effected by using lighter rafters, and also the saving in transport charges. The approximate weight of the shingles in the house illustrated on page 384 is four tons. The approximate weight of English tiles would be ten tons, thus effecting a saving of six tons in transport charges, which is a considerable item at the present time. It is well known how the home timber trade of Scotland helped with large supplies of timber during the war, and this attractive example of a timber-constructed dwelling should go far to remove the deeply-rooted prejudice in Scotland that brick and stone are the only suitable materials for house building.

Owners of motor cars will be much interested in the garage which has been erected by Messrs. Kirkwood, Bannatyne & Co. It has accommodation for two cars and a workshop attached, and is constructed entirely of "Everite" asbestos cement sheeting, which is claimed to be impervious to extremes of heat and cold, fire-proof, weatherproof, and imperishable. The adaptability of the garage to the "ideal home" is put forward as one of its attractions.

The exhibits of asbestos gutters, down pipes, sinks, cistern-heads, draining boards, valley gutters, &c., are specially interesting, and are claimed to be 20 per cent. cheaper than cast iron. The deeply-corrugated sheets will stand 8 cwts. per square foot having purlins at 2 ft. 6 in. centres, and the pipes will stand an average internal pressure of 100 lbs. per square inch; this remarkable strength is claimed to be due to the high grade of material used and the laminated principle used in the construction of the pipes, &c.

One of the most interesting sections of the exhibition is the model laundry equipped and erected by Messrs. James Armstrong & Co., Ltd., for a number of the leading laundries in Glasgow and district. It represents an investment of £7,500, and includes the latest British and American machinery.

A considerable portion of the exhibition, including large stands where the Corporation Gas



Hambleden Rural District Council Housing Scheme.

MR. G. BERKELEY WILLS, A.R.I.B.A., Architect.

[These houses have been built on different sites for the Hambleden Rural District Council and are semi-detached "A" class houses. The walls are 9 in. brickwork (Fletton's) covered with cement roughcast, and the roofs are covered with tiles. The water supply has been obtained by sinking 1½ in. galvanised iron pipes to an average depth of 25 ft., with pump at top—one bore to each semi-detached block. These bores have given a plentiful supply during the recent drought. The contractors for the work were Messrs. R. H. Harris & Co., of Marlow.]

and Electricity Department is showing appliances, is occupied by demonstrations of the advantages of gas and electrical heating and cooking appliances over coal. At least one exhibit of importance is concerned with the burning of oil, which supplies the heat for the boilers of the exhibit of the Laundry Association.

With regard to gas lighting, the exhibit of the Thermal Syndicate, Ltd., is worthy of careful consideration, especially with regard to semi-indirect gas lighting, in which is used "Vitreosil." This consists of pure silica fused in an electric furnace, and is a product somewhat similar to glass, but having unique properties which render it particularly valuable in its application to the manufacture of mantle protectors and intensifiers. An interesting experiment is performed at the exhibit to demonstrate the refractory nature of "Vitreosil" gas globes. A globe is placed over a bunsen burner until it reaches a white heat, and cold water is then poured over it. An ordinary glass globe would crack to pieces, but this type remains intact. Apart from its technical qualities this material lends itself to the most delicate colourings, and is of high artistic value.

In the Artisans' Section there is a good display of clever and original work, mostly bearing directly on the object of the exhibition. The workers have recently given considerable time and thought to such subjects, and now show models dealing with house building, plans for utilising waste ground and for gardens, home appliances which show considerable inventive power, and models of furniture.

The Photographic Section is particularly interesting, and in connection with this competitions have been inaugurated, both professional and amateur, and there is a display of pictures of the most interesting, artistic and highly-finished order. The exhibit is under the auspices of the Scottish Photographic Federation, and a special class is occupied with architectural studies.

Amongst other exhibits, Sprake's kitchen and scullery cabinet is of considerable interest. It contains a sink fitted for hot and cold water and a novel arrangement for stacking and drying dishes. Another good stand is that of the Liner Concrete Machinery Co., Newcastle-upon-Tyne, on which is shown the "Liner" concrete block-making machine, which is designed to make all types of concrete blocks, sills, lintels, &c., up to 6 ft. in length and 12 in. in depth. An ingenious arrangement for the speedy removal of the blocks is also demonstrated.

The Exhibition is a venture that cannot fail to be of great value to the community. The hygienic and sanitary appliances are sure to please the most fastidious, and much that is possible to raise the housewife's daily round, from one of drudgery to one of comparative pleasure, is being shown. The labour-saving devices shown are excellent, and there is a great display of patents and improvements brought out with a view to overcoming the housewife's enemy—dirt.

There is no doubt that as education advances the people will respond to the new environment, and a new atmosphere as regards the home will result. Nearly every large city has its slum problem, and reformers of every denomination have their own pet theories to advance towards the amelioration of the lot of the masses, but after a day at the Ideal Homes Exhibition one feels convinced that as these experts mature their ideas and put them into practice the slums will disappear, the need for certain reforms will vanish automatically, and a happy, contented populace will rise who will appreciate at its true meaning the word "home."

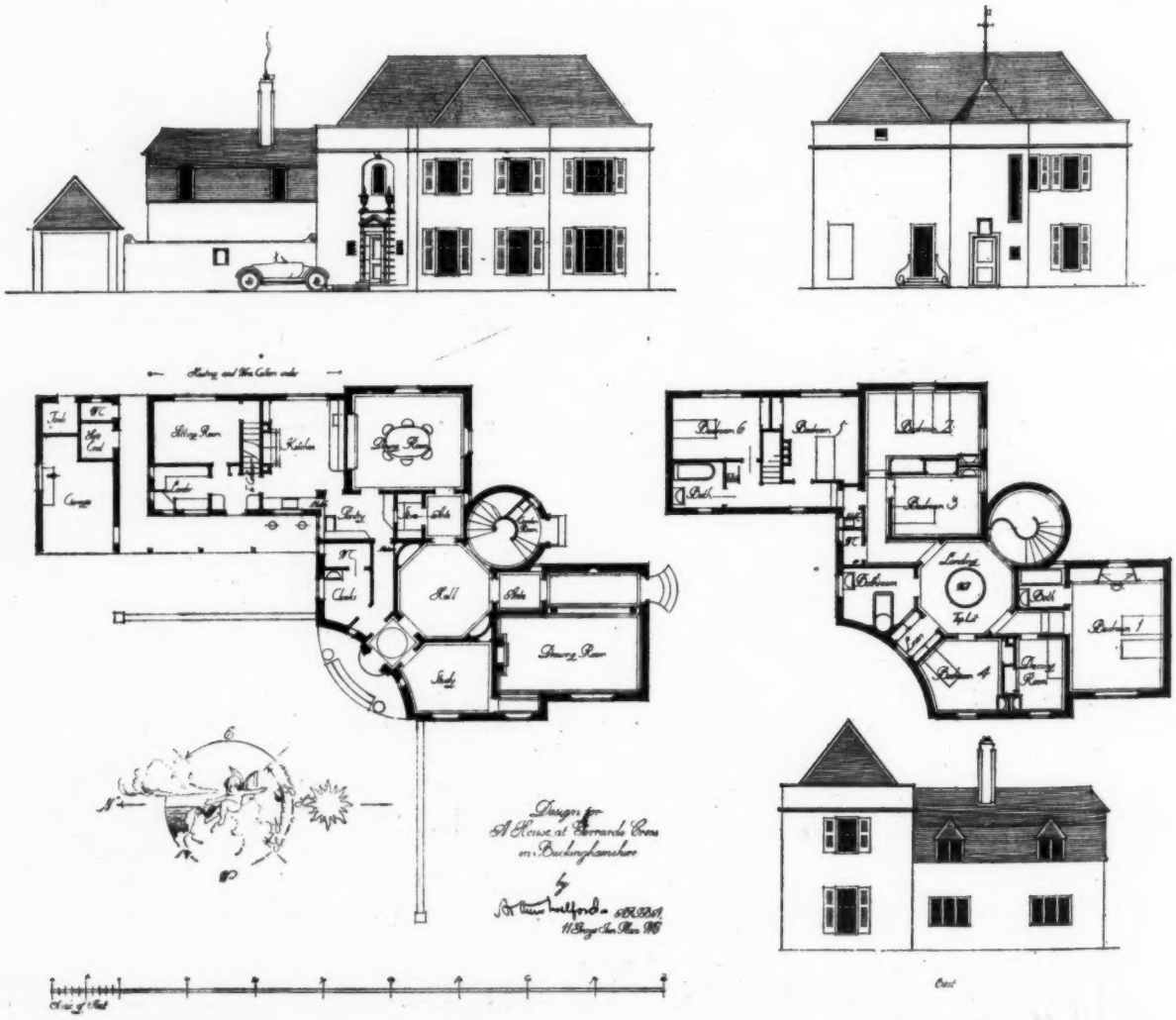
The stand of *The Builder*, Ltd., is No. 19, Avenue A, where, in addition to an extensive range of books of interest to the architectural profession and the various branches of the building industry, an interesting model of Old London Bridge, constructed after the remarkable drawing of the late H. W. Brewer, is on exhibition.

On Wednesday, September 28, at 7.30 p.m., Mr. H. A. Cox, F.C.A., will deliver a lecture on "London in the Time of Henry VIII," illustrated by lantern slides of some of Brewer's drawings and the model above mentioned.

The Exhibition closes on October 8.

The Sale of Reigate.

For three days next month Messrs. Knight, Frank & Rutley will be selling the old Town Hall, hotels, banks, shops of every description, a motor 'bus garage, a cinema, private residences, numerous cottages and ground rents; in fact, most of the main streets of Reigate, as well as the agricultural and building land surrounding the town. There are over 400 separate freeholds suitable to buyers of every description, and there are few towns within 21 miles of the Metropolis with so many and such varied attractions.



Proposed House at Gerrards Cross.—MR. ARTHUR WELFORD, A.R.I.B.A., Architect.

[It is proposed to build this house in two portions, the kitchen wing being first erected to serve as a chauffeur-gardener's cottage. At some future time the remainder of the house would be built on to the cottage, the latter then serving as the servants' quarters. It is proposed to heat the house centrally from a boiler in the cellar, one open fire only being allowed for in the drawing-room. The planning aims at convenience and economy of service. Materials would be local plum-coloured brick (hollow walls) with red dressings, and sand-faced, hand-made tiles to roof. The gutters to the main roof would be in asphalte.]

ARMORTOP

IF you have a concrete floor which is dusting or disintegrating this should interest you. Some concrete floors are laid monolithic and composed of concrete slabs evened off in a level and uniform manner, the concrete being a 1 : 2 : 4 mix and having had no cement finish topping laid on the base concrete. The concrete in such a floor is usually to a certain extent porous, and is likely to dust or flake when given hard usage.

ARMORTOP is a liquid chemical compound, manufactured to harden the surface of such a monolithic floor in those instances in which it is extremely difficult to lay a 1 in. topping on an old or existing concrete floor owing to space limitation.

ARMORTOP has properties which crystallize the cement surface with which it comes into contact. It is applied to the floor by slushing it on the surface from a bucket and distributing it over the floor with a mop or stable brush, after it has been diluted with equal parts of water.

ARMORTOP need not be rubbed into the floor. It is only necessary to distribute it over the surface. To get the best results a floor should be given three applications of Armortop at intervals of at least four hours. It makes no difference if the intervals are longer. One gallon of Armortop and one gallon of water (mixed in equal parts) is sufficient to treat 90 to 120 sq. ft. of old concrete flooring or 150 to 175 sq. ft. of new concrete flooring. These figures are based on three applications. One man can treat some 10,000 sq. ft. of flooring with one application of ARMORTOP in one day. Unskilled labour can be used in applying ARMORTOP. The only qualification necessary is the ability on the part of the workman to use a mop or brush.

The only directions that need be given in applying ARMORTOP to a floor are that the floor must be cleaned for reception of the compound. Old floors filled with oil must first be washed with petrol, then washed with a solution of sal. soda or any strong lye soap, and finally washed clean.

The application of ARMORTOP to a concrete floor brings about two actions which are practically simultaneous. The salts in ARMORTOP allow thorough silication, as they act upon the cement itself. This silication brings the concrete to a condition where the other ingredients in ARMORTOP may act upon it. For a cement floor finhis which dusts and wears in spots ARMORTOP adds an armour-like protection and prevents the ordinary soft cement underneath from dusting and wearing.

ARMORTOP functions by chemically changing the soft granular topping into a granite-like mass which resists abrasion. The application of ARMORTOP ensures added years of wear and use for any cement floor, whether it has just been laid or whether it has been in service for several years. It is invaluable in instances where it is impossible or impracticable to tear up and relay old concrete floors which are beginning to rut or disintegrate.

The cost of ARMORTOP, as well as of the labour involved, is extremely low when measured by the results it produces. So easily and quickly does ARMORTOP transform soft floors into hard ones that the whole job can be done in the evening after closing hours. The floor may be made ready for use by the following morning without the loss of a single minute of working time. This feature dispenses with costly shut-downs and delays to manufacture.

No method has been devised up to the present which will produce a cement floor for heavy traffic equal for dustlessness and hardness to an ANTI-HYDRO floor. ANTI-HYDRO is an integral compound that is used throughout the mass of the masonry to be hardened or waterproofed—a liquid chemical compound for adding to the water that gauges the dry concrete mix. ANTI-HYDRO can only be used at the time the floor or the floor topping is laid.

ARMORTOP does not pretend to produce the floor that can be made with the assistance of ANTI-HYDRO, but ARMORTOP may be very successfully used in instances where a floor has already been constructed and cannot be relaid and where an ANTI-HYDRO topping cannot be applied without great inconvenience or dislocation of business.

We sell ARMORTOP in 44-gallon barrels. Its cost works out at something between 6d. and 7d. per sq. yard of floor surface. This estimate of cost allows for mixing the ARMORTOP with equal parts of water and applying three coats to the floor which is to be made dustproof.

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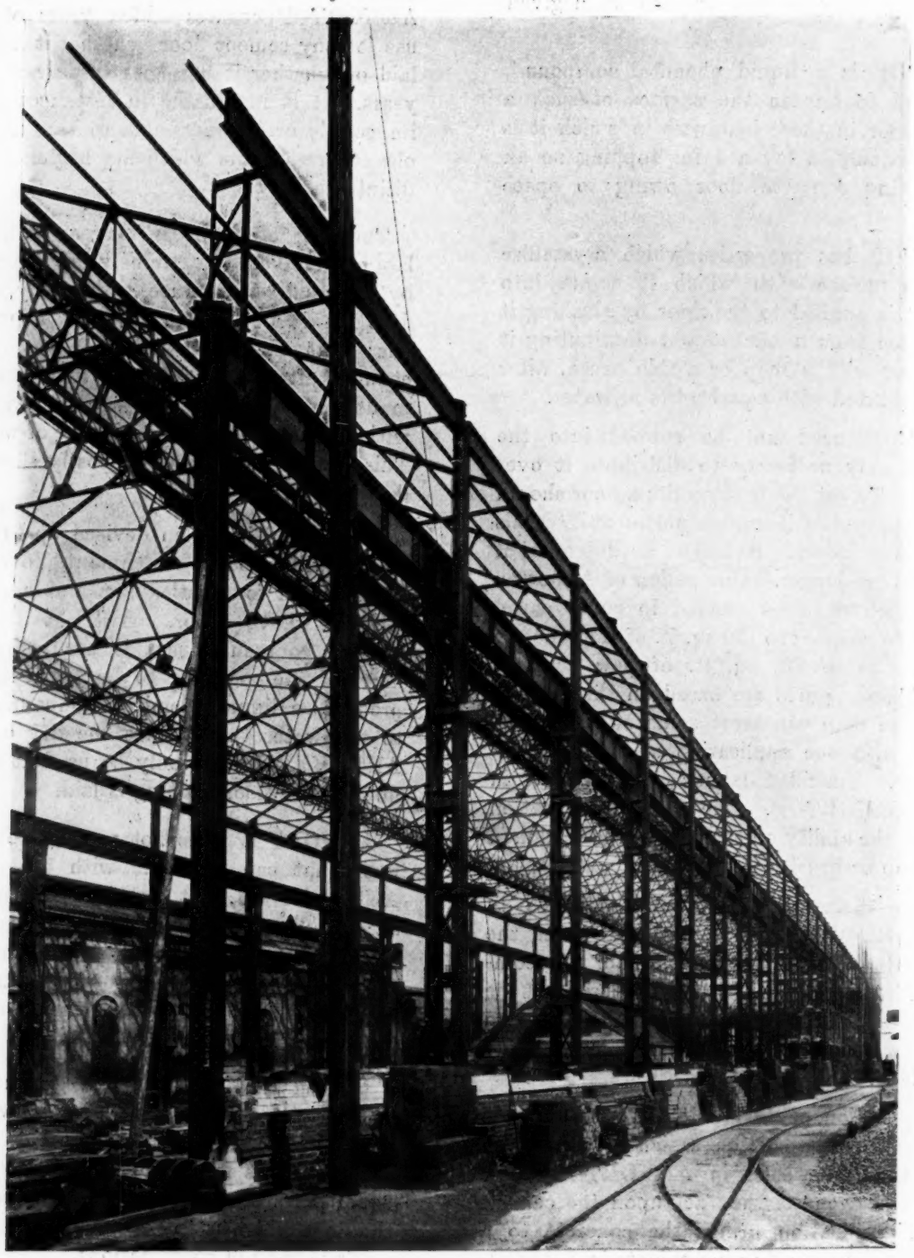

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HOUSING AND TOWN-PLANNING NOTES.

Wandsworth Housing Scheme.

The Ministry of Health has consented to the erection of a further 130 houses by the Wandsworth Borough Council.

Housing at Royston.

The Royston Urban District Council has approved plans for the erection of seventy houses at Royston. The tenders have already been approved by the Ministry of Health. The architects are Messrs. Dyson, Cawthorne & Coles, of 10, Regent-street, Barnsley.

Hemsworth Housing Scheme.

The Hemsworth Urban District Council has approved plans for the erection of fifty-six houses at Hemsworth. The tenders have been approved by the Ministry of Health. The architect is Mr. T. H. Richardson, of Brierley, near Barnsley.

The Cost of House Building.

At a meeting of the Bradford Corporation last week, the Chairman of the Health Committee, in explaining that the cost of the 200 houses being built by direct labour at Bradford Moor could not be determined until the basic rate had been agreed, said the first houses that were erected cost probably £940, the next would cost about £840, and it was anticipated that those now being erected would cost about £740.

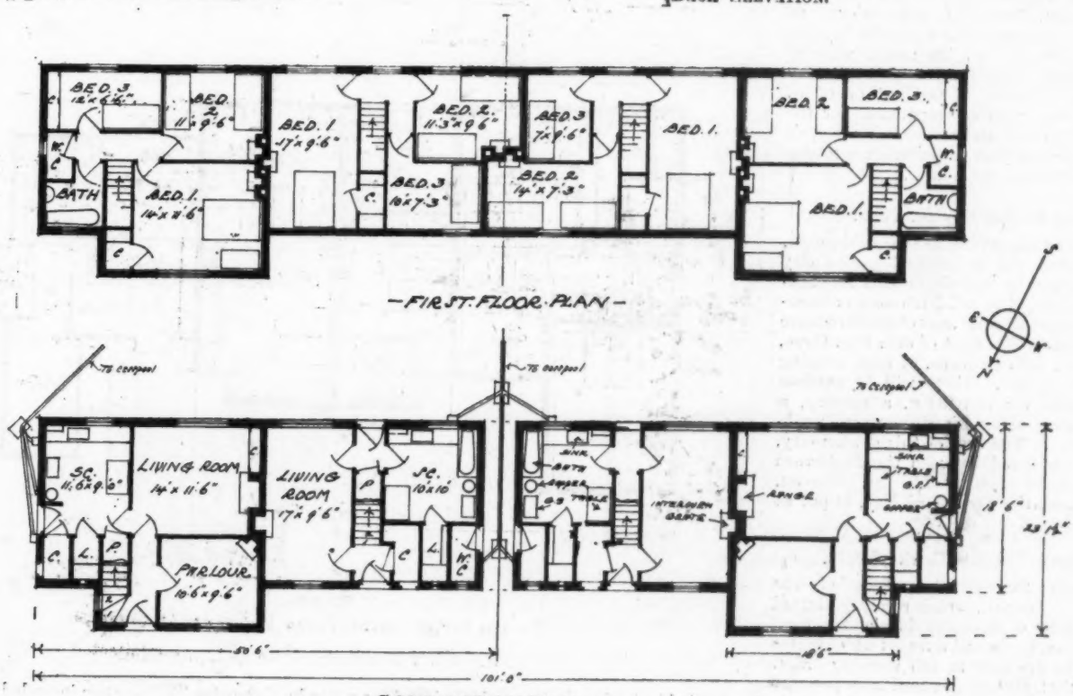
Town-Planning in Mining Areas.

In connection with the development of the colliery area near Mansfield, the Ministry of Health held a conference at Mansfield last week, at which the local authorities of Mansfield, Huthwaite, Kirkby, Mansfield Woodhouse, Sutton, Warsop, Southwell, Skegby, Blackwell, Nottinghamshire and Derbyshire were represented. The area involved comprises 116,630 acres, with a population of 145,843.

Mr. Montague Harris (Ministry of Health), who presided, said it was through town planning that waste was avoided. It was often ineffective to deal with a single town, as municipal boun-

FRONT ELEVATION.

BACK ELEVATION.



BLOCK OF FOUR, CLASS "2 A" AND "2 B."

Great Marlow Urban District Council Housing Scheme. MR. G. BERKELEY WILLS, A.R.I.B.A., Architect.

[This scheme comprises twenty houses for the Marlow Urban District Council. The houses are built in five blocks of four houses each, the end houses being "B" class and the intermediate houses "A" class. The walls are built of 9 in. brickwork (Fletton's) covered with cement roughcast coloured light cream, and the roofs are covered with Major's sand-faced pantiles. The contractors are Messrs. G. S. Lovall & Son, of Marlow and Gerrard's Cross.]

daries rarely bore any relation to economic or social facts. The right method was to treat as one an entire economic or geographical unit, so that as each component part developed itself it would do so to mutual advantage. Without a regional plan they might get the housing scheme of one local authority put next to the factory area of another, or astride of what should be the route of an arterial road, or there might be an ineffective distribution of such amenities as public open spaces, &c. For this reason a number of local authorities had already combined for the purpose of town planning. The better the regional town plan, the more likely it was to produce true economy.

The Mayor of Mansfield said he thought it was desirable that the authorities should combine in one town-planning scheme for their area. It was probable that in the course of a few years many of the beauties of the district would be destroyed unless they agreed upon a town-planning scheme for the area. They should endeavour, in connection with future colliery developments, to get the pits placed in suitable positions, and to see that suitable houses were erected for the people employed at the pits.

Mr. J. Harrop White (Town Clerk of Mansfield) said the area was one in which there were likely to be colliery developments in the future, and many of them thought that the beautiful parts of the forest in that district should be safeguarded and not desecrated by the construction of pits and colliery villages in unsuitable positions. A united body would have far more influence in this direction than an isolated council. The sites of collieries and mining villages should be selected with a view of preserving the amenities of the district. It was desired by a town-planning scheme to preserve the beauties of the immediate neighbourhood.

The conference decided to suggest to the respective councils represented the desirability of preparing a joint town-planning scheme, to be prepared by a joint committee.

Welling Housing Scheme.

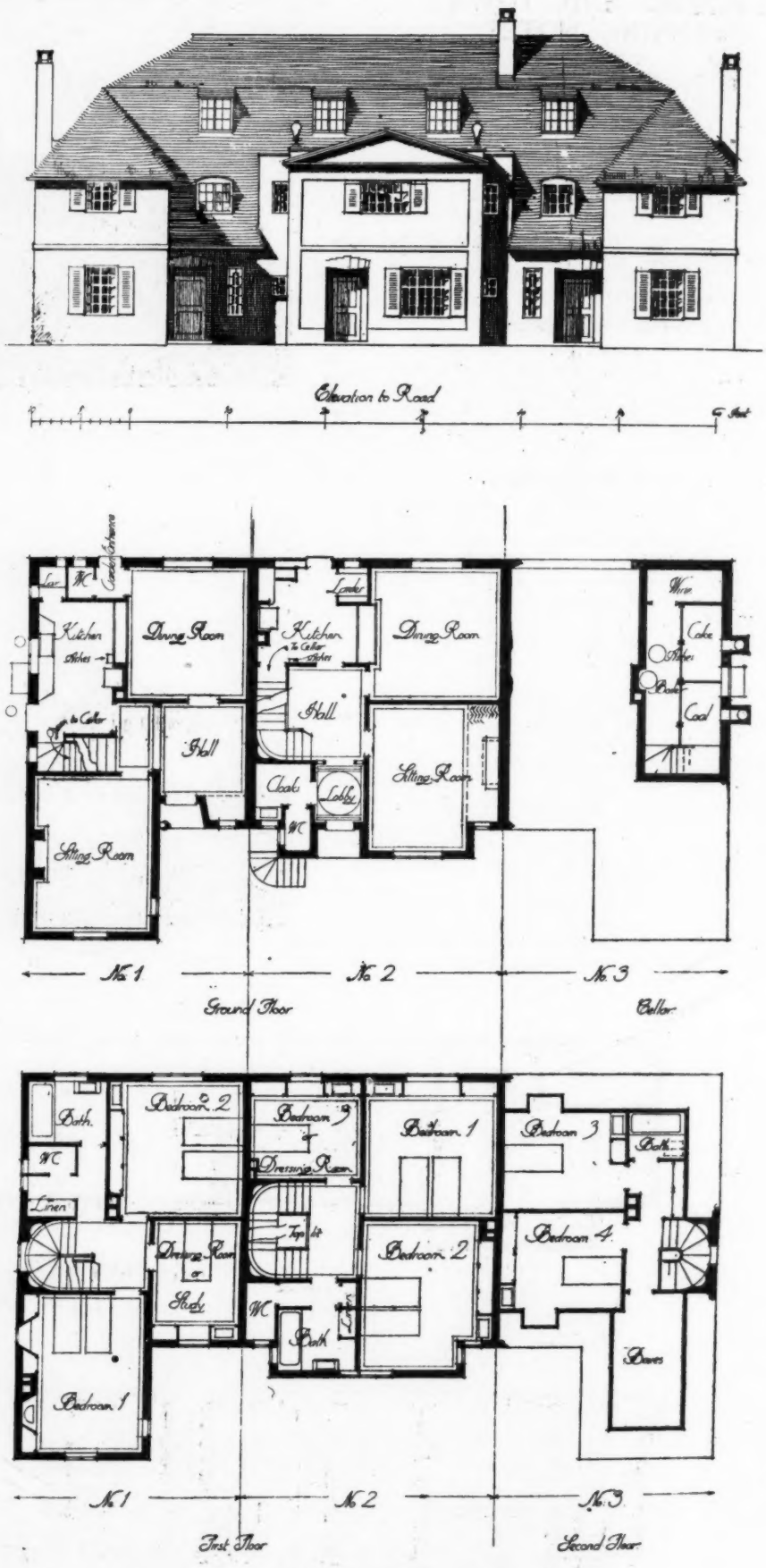
With reference to the description and illustrations of the Welling housing scheme in our issue for August 12, Mr. Walter M. Epps informs us that owing to a regrettable error the lay-out plan was published under his name, whereas Mr. W. T. Howse, the Surveyor of the Bexley Urban District Council, is the author of it. Mr. Howse is also entirely responsible for the formation of the roads and sewers. Mr. Epps's responsibility as architect to the scheme relates only to the erection of the houses.

Proposed Garden City for Paris.

A scheme is on foot, states the *Daily Telegraph*, for building what will be the first garden city for Paris workmen on the dismantled fortifications. It is intended to build houses to accommodate 2,500 persons on an area of 88,000 square yards. The flats will consist of one, two, three, and four rooms, with kitchens, at rents ranging from 600 f. to 1,092 f. There will be gardens and open spaces for recreation, a nursery, a maternity school, children's dispensary, washhouse and baths. The cost of this garden city, which will be planned between the Boulevard Ornano, the Rues Damremont, Du Ruisseau, Du Ponteau, and the Boulevard Ney, is put at 24,000,000 f.

Municipal Concrete-Block Works.

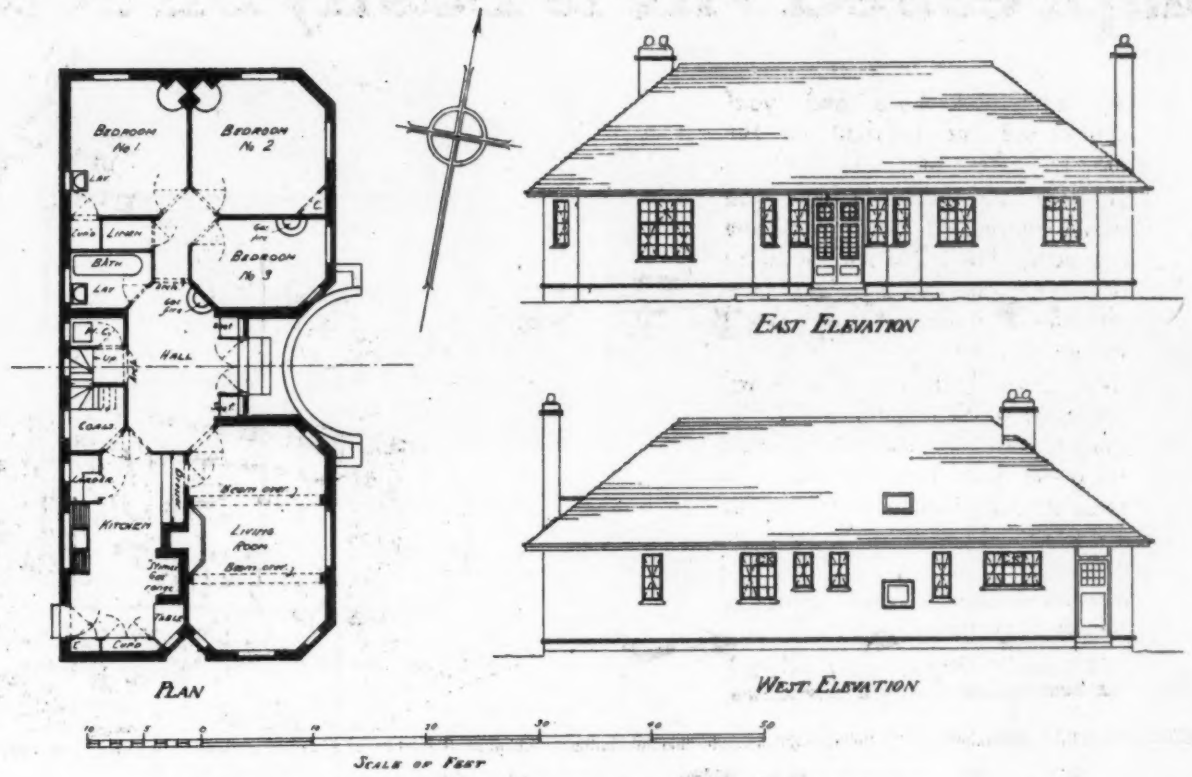
The Eastern District Committee of the Stirling County Council, which recently started the manufacture of concrete blocks for local housing schemes, has issued a report which states that the works are now in full working order. It is stated that the blocks, and also pre-cast sills, lintels, panels, posts, &c., are being made for less than they would cost if purchased from contractors. The Scottish Board of Health has recommended the Committee not to curtail its activities in this direction now the housing schemes have been cut down, but to endeavour to dispose of any surplus blocks to neighbouring local authorities. The cost of setting up the undertaking was about £4,000.



Design for Block of Three Houses in London.

MR. ARTHUR WELFORD, A.R.I.B.A., Architect.

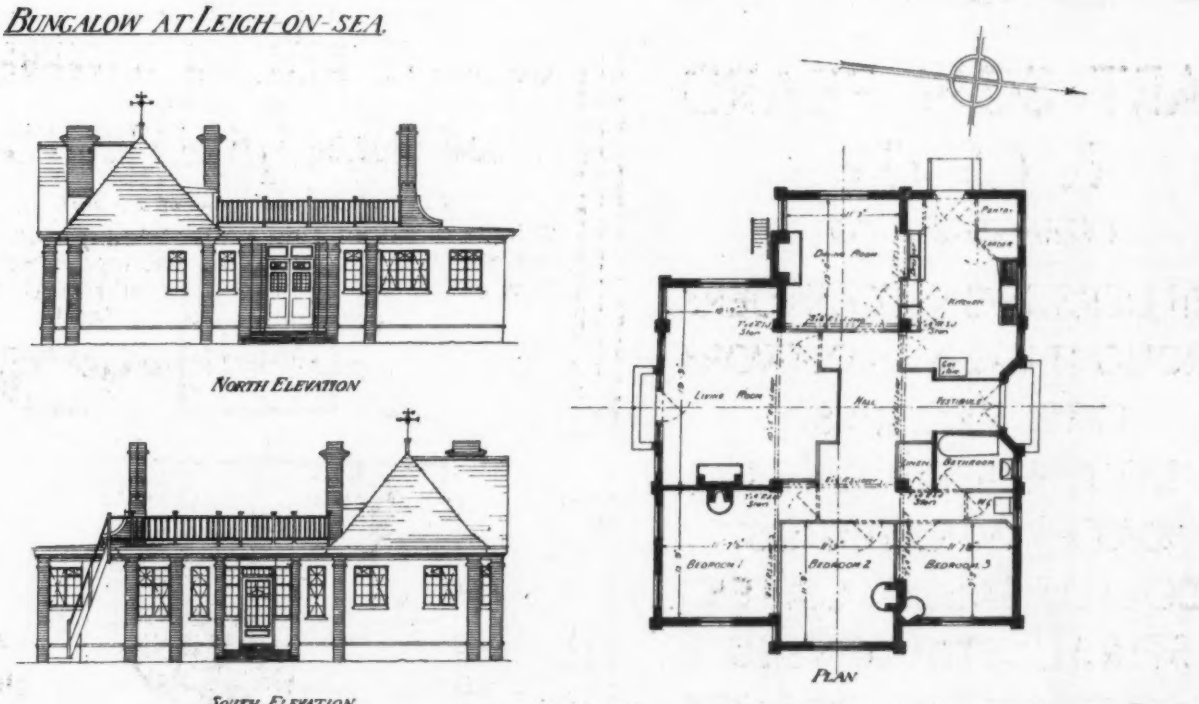
[This block of three houses is designed for a site in Hampstead. They are intended for occupiers of the professional class who require houses which are convenient and economical to run and are not expensive in upkeep. To this end they are centrally heated from a boiler in the cellar next to the coal and coke stores, thus avoiding fuel carrying. The "working" kitchen is tiled and the cooking is by gas. A large china cupboard is provided between the kitchen and the dining-room with access from both sides; gas is laid on to this for tea-making. In order to avoid expense of upkeep the windows are stock pattern iron casements set direct in the brickwork. The soffit of the eaves is formed of tiles, and all external woodwork is cut down to the minimum. Mr. Arthur Welford, A.R.I.B.A., of 11, Gray's Inn-place, W.C. 1, is the architect.]



Bungalow at Bexhill-on-Sea. MESSRS. SMEE & HOUCHIN, Architects.

This bungalow has been arranged to be worked without a servant. It contains a kitchen-scullery fitted with a "Stimex" gas cooker with boiler, a large dresser partly arranged for service, with a cutlery drawer available for use from either kitchen or living-room. The bathroom and three bedrooms open off the hall, and the living-room is 20 ft. long. The hall is octagonal in shape, with seats on either side of the front door. The roof has a portion boarded for lumber space, with small stairs leading up to it. The walls are hollow bricks rendered on the outside with waterproofed cement, and the roof is covered with red tiles. The window sashes are of steel, by Messrs. Henry Hope & Sons.

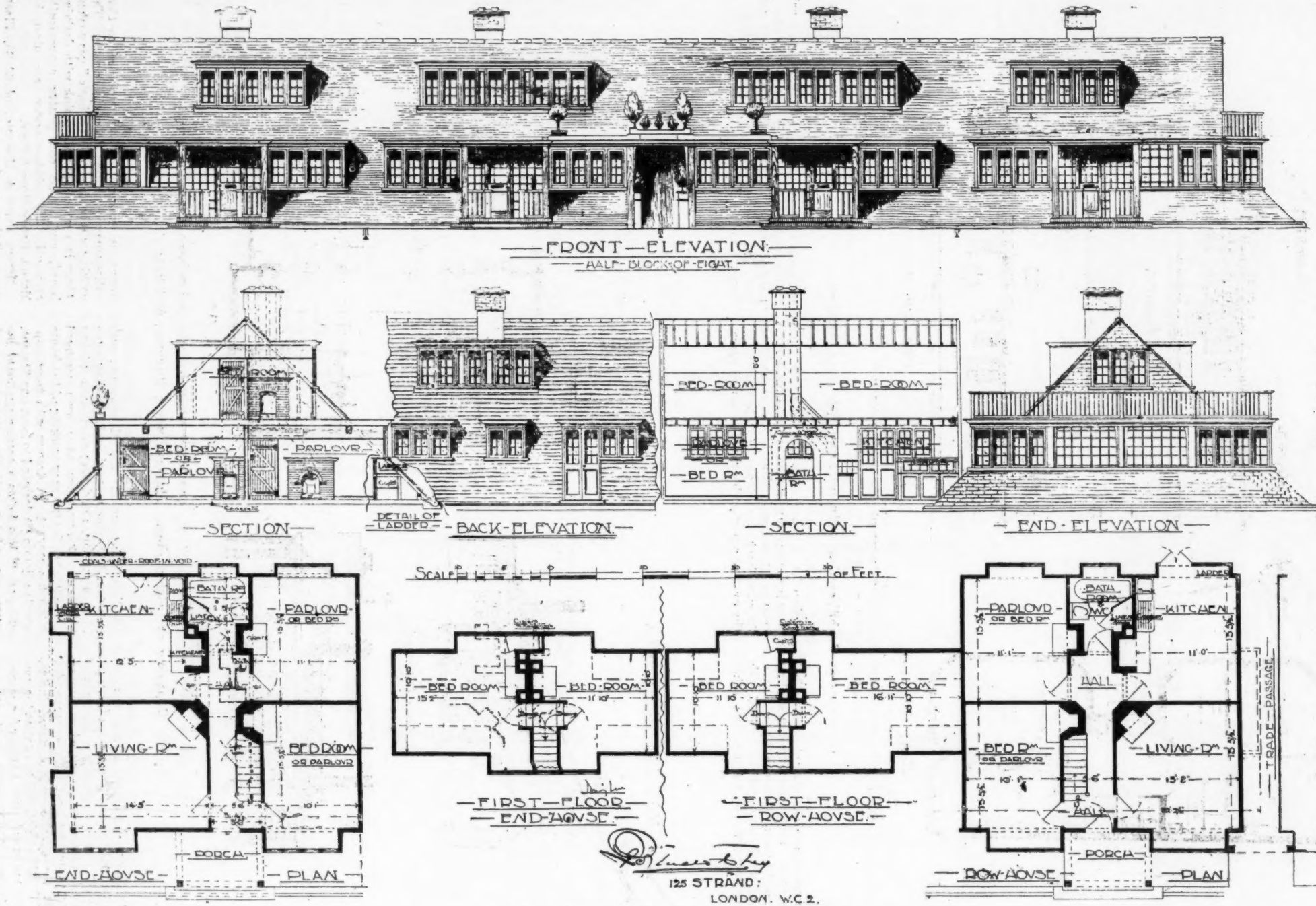
BUNGALOW AT LEIGH-ON-SEA.



Bungalow at Leigh-on-Sea. MESSRS. SMEE & HOUCHIN, Architects.

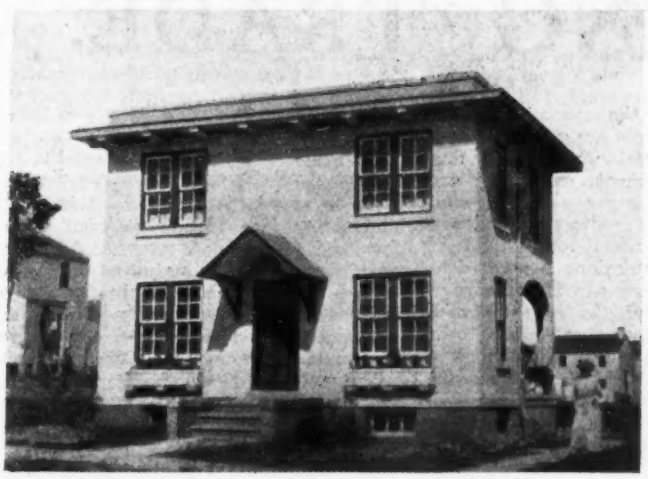
The bungalow illustrated above has recently been completed at Burnham-road, Leigh-on-Sea, Essex. It is built with 9 in. walls of hard stocks in cement on concrete foundations, and the walls are rendered with waterproofed cement on the outside and plastered inside. The roof is tiled in front, and the flat at the rear is asphalted and railed, with a ladder for access. The bungalow contains three bedrooms, all fitted with fireplaces; a tiled bathroom with lavatory, linen-room, large hall, drawing-room 19 ft. 9 in. long, and dining-room with kitchen adjoining. Conveniences have been arranged in the kitchen for the easy working of the house without a servant. A dresser with three cupboards adjoining is designed to form one fitment, and part of this forms a service cupboard between the kitchen and the dining-room. A drawer is arranged in this cupboard so that cutlery may be obtained from either room. The cooking will be done by a "Stimex" gas cooker. There is a gas copper, deep sink with draining board, and larder and pantry conveniently arranged. The window sashes are steel, by Messrs. Henry Hope & Sons.

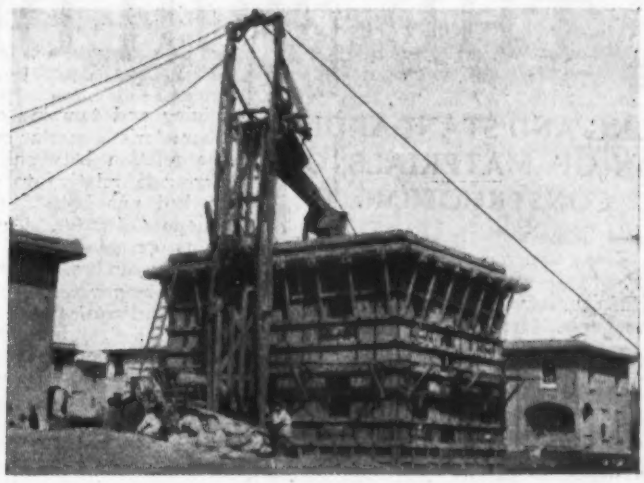
Messrs. Smee & Houchin, of 82–85, Fleet-street, E.C. 4, are the architects.



"Roof Houses." MR. REGINALD FRY, Architect.

[The special features claimed for this system are:—Speed of erection; gas heating if used dispenses with brick flues; no loss of time owing to weather after rafters up and outer edge of concrete platform (surface concrete) laid; no iron gutters or down pipes; roof gutter formed at edge of concrete platform; dormer roofs formed to slope back to main roof and saddled to carry water to the sides. The design is the invention of Mr. Reginald C. Fry, of 125, Strand, W.C.2.]





Concrete Houses at Phillipsburg, New Jersey.

CONCRETE COTTAGE CONSTRUCTION IN AMERICA.

ON this page are illustrated two methods of rapid concrete cottage construction as used in the erection of large housing schemes in the United States.

The houses at Youngstown, Ohio, are of pre-cast units, except for 8 in. footings cast in place. The units are reinforced to sustain the loads in the structure and to withstand the strains in lifting, loading, and placing. Exterior wall slabs are of ribbed design. They are usually of story height and of a length equal to a room or entire side wall dimension. They are rabbeted at the ends so that the adjacent slabs as set provide a space for sealing with grout. The slabs are cast with the outside down. Ribs, giving a total maximum wall thickness of 7 in., are formed by boards set in the slab forms. The panels between have a thickness of 3 in. Furring strips, asphalte painted on the back side, are anchored by nails to ribs when the slab is cast. Partition walls are hollow, the vertical coring being provided by means of form boxes set in the slab forms as the concrete is poured. These are afterwards withdrawn, the spaces filled with sand, and the face of the slab is trowelled. Sand is removed later by washing with a hose.

Floor slabs are beamed, the central panels being 2½ in. thick. These are cast ceiling side down over well-finished wood cores designed to give a moulded trim around the edge of each panel adjacent to the beams. Floor slabs are so rabbeted at the outer edge as to fit over the wall slabs, thus anchoring the work. Window and door openings are rabbeted and provided with wood nailing blocks, cast in. Sills are separately cast in order to get a better finish. All rooms used for living purposes are fireproof. The roofs are sloping and covered with red tiles.

At Phillipsburg, New Jersey, one hundred houses are being built on the system illustrated for the Ingersoll-Rand Co. The walls, interior partitions, floors and roof are of solid concrete poured at one time, and each house is poured in eight hours. The electrical conduits and water piping are assembled complete in the moulds before pouring. The walls are solid, 6 in. thick, reinforced with small steel rods and finished with a coat of stucco dashed or sprayed on with a stiff brush. This covers any form marks or inequalities in texture of the poured concrete, and at the same time offers a means for varying the appearance of the houses. The outside walls have their interior surface furred, lathed with wall board and plastered. This furnishes a "dead" air space and prevents dampness from condensation. Both first and second floors are of solid concrete poured in one piece with the walls and partitions. The concrete floor slab is 3½ in. thick supported by small concrete beams, both reinforced and thus forming a self-supporting system. In order to obtain a floor surface upon which carpet may be tacked or rugs used, an ordinary wood floor nailed to wood sleepers is laid on the concrete slab. The bathroom floor is an exception, the smooth finished concrete slab forming a sanitary and waterproof floor. The solid concrete roof is flat, with just enough slope to drain off the water. Parapet walls, together with wide eaves, serve to conceal the flat roof, which is covered with waterproof paint. Window frames and door frames are placed in the moulds before pouring concrete so that window casings, jambs, trim, &c., can be nailed directly to the frames. The forms used in building these houses are of wood, and may be used several times before destruction. Six-room houses of this type are heated by a pipeless heater in the cellar.

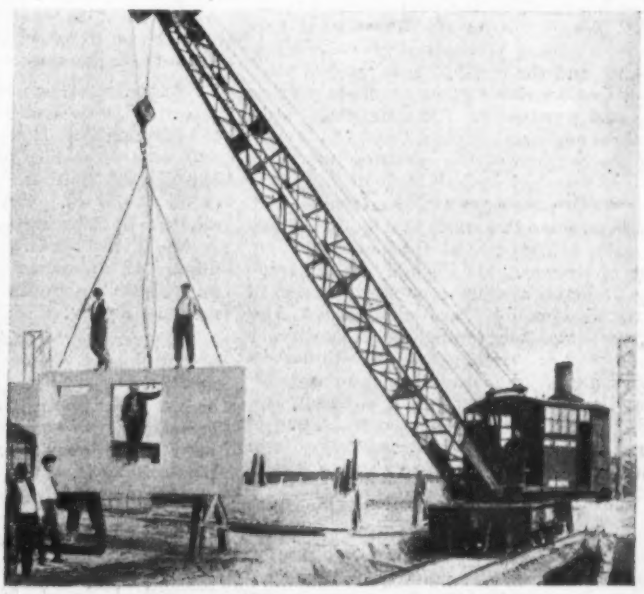
The illustrations are taken from a brochure issued by the Adamite Co., Ltd., of Regent House, Regent-street, W. 1, the English agents for Atlas White Portland cement, which has been used for stucco work on the houses.

Obituary.

The death has occurred of Mr. Joseph Graham, of Carlisle, who carried out several public works in the district. He acted as surveyor in connection with the water supply from Roughton Gill for the Carlisle Rural District Council, and sewerage schemes at Wetheral, Stanwix, Kingstown and Belle Vue; and as joint architect for the new markets at Carlisle.

Repairs to a Church Roof.

Some interesting work has been carried out at the church of Stambourne, Essex, where the old lead, weighing about ten tons, has been stripped off the tower, melted and re-cast into sheets, and relaid on the spot. The work was done on the spot because the lead was of superior quality and was thought to contain a certain amount of silver.



Concrete Houses at Youngstown, Ohio.

THE BUILDING TRADE.

TESTING AND STANDARDISATION OF MATERIALS OF CONSTRUCTION.

WE give below some further notes on the reports of the American Society for Testing Materials. Other reports of the Society were dealt with in our issues for August 12, September 2, and September 9.

The Relation of Voids to Strength of Concrete.

This report is a very valuable one. There is very little doubt that economy might often be effected by the better proportioning of the materials used in making concrete. It is strength which is wanted and the greatest strength obtainable for the minimum of material, particularly, of course, cement. This can only be secured by the study of aggregates, which vary very much locally. The voids in a concrete largely determine its strength, and to adopt a 1:2:4 mix for any conditions is to ignore the scientific aspects of concrete design. This may be a trivial matter in a small brick-built structure employing concrete only in foundations, but it may become a question of the greatest moment in a reinforced concrete building. All this emphasises the desirability of making requirements in the matter of materials on the basis of the characters really wanted, as pointed out in a paper recently read before the R.I.B.A. If instead of specifying a mix we could specify strength our concrete engineers would soon look further into these matters, with considerable financial advantage to themselves and to building owners.

This report studies fine aggregates through the determination of voids resulting from different proportions of cement and water, and the author gives various characteristic curves showing relations from which concrete mixes can be calculated.

The results obtained are suggested as useful for (1) comparison and acceptance of aggregates, (2) design of mixes for density and strength, and (3) judging the effect of water content.

First of all it is stated that a definite relation exists between the voids and strength of concrete and that the voids may be taken as an index of strength. The report must be studied for detailed information, but as striking evidence of the value of the investigations it may be stated that whereas a 1 to 5 concrete with 0.10 voids showed a strength at 28 days of 4,000 lb. per sq. in., with 0.35 voids the s rength was only 500 lb. For different proportions of water there is a point called the "basic water content," above and below which the percentage of voids increases. Some experiments showed that fine sand gave a higher percentage of voids than coarse sand, and the conclusion is reached that mortars at basic water content are slightly drier than normal consistency. The limiting value of the coarse aggregate is placed at 75 to 90 per cent. of the volume of the resulting concrete. The limit of practical workability will influence the amount of coarse aggregate permissible, and it is of special interest to note that well-rounded pebbles give a higher limit than elongated or irregular fragments. It would thus seem possible to make a more economical concrete where rounded pebbles are obtainable. The report gives suggestions for methods of specifying the quality of fine aggregates, some hints on laboratory and field methods, and some criticisms on the limitations of sieve analyses, and concludes with appendices on the technique of tests and on bulk and weight measurements in the field.

Density and Strength of Concrete.

This paper deals with the very important matter of the strength of concrete relative to the voids therein, and it must be remembered that voids are not only due to imperfect grading of the materials selected, but to insufficient mixing and tamping of the concrete in use. Characteristic mortar curves are given showing the relation between mortar voids and fine aggregate relative to cement, and these are worked out both for proper and excessive amounts of water. There is always a tendency to use excess of water, hence the importance of these researches. The work done is asserted to enable aggregates to be compared, concretes of definite densities and strengths to be designed, the effect of and proper quantity of water to be ascertained, and the strength of given mixes to be estimated. It is impossible to give a satisfactory précis of the work detailed in this publication, and its 29 pages should be studied by those interested. Generally speaking, the greater the volume of coarse aggregate the greater the density of the concrete, but only up to a point where the voids are no longer filled by mortar. The coarse aggregate may be 75 to 90 per cent. of the concrete, depending on the gradation and shape of the particles. Well-rounded pebbles in that they become more readily compacted may be used in larger proportion than angular fragments. This is an interesting conclusion. Very fine sand seems to be most favourably used with a very coarse aggregate in a rich mixture. It would appear possible to specify the percentage of voids allowable for materials available in any specific locality.

LIGHTING OF FACTORIES AND WORKSHOPS.

THE Home Office has issued a Welfare Pamphlet (Welfare Pamphlet No. 7. London: H.M. Stationery Office, price 4d. net) dealing with the lighting of factories and workshops. After referring to the ill-effects of bad lighting on the worker and on the work turned out, it is stated that the first requisite of good lighting is that it should be adequate, but in addition it must be suitable for the purpose for which it is required. The factors which contribute to a good system are summarised as follows:—

(i) Adequacy.

(ii) Suitability, comprising:—

(*a*) Constancy and Uniformity.—A reasonable degree of constancy and uniformity of illumination over the necessary area of work.

(*b*) Prevention of Glare.—The placing or shading of lamps so that the light from them does not fall directly on the eyes of an operative when engaged on his work, or when looking horizontally across the workroom.

(*c*) Avoidance of Shadow.—The placing of lights so as to avoid the casting of extraneous shadows on the work.

ADEQUACY.—For most workrooms, states the report, it is necessary to consider the amount of illumination that may be regarded as adequate:—(*a*) For affording safe access from one part to another; (*b*) for efficient carrying on of the work. The first of these has been studied by the Departmental Committee on Lighting in Factories and Workshops, and numerical standards have been recommended for adoption as fulfilling the minimum requirements. Briefly, these are:—

(*a*) Over the "working area," or that portion of the floor occupied by or in the immediate neighbourhood of the machines, benches, plant or material at which the operatives stand or sit in execution of their work, including the gangways and alleys between or around such working places, 0.25 ft. candle.*

(*b*) All other parts of the factories and workshops over which persons are liable to pass, *e.g.*, passages, stairways, lobbies, 0.1 ft. candle.*

(*c*) In all open spaces in which persons are employed during night, and in dangerous parts of a regular road or way forming the approach to any place of work, 0.05 ft. candle.*

These standards are to be regarded not as embodying ideal conditions, but as suitable for legal minima. A workroom, for instance, with a uniform illumination of 0.25 ft. candles, would be very inadequately lighted. Owing, however, to the diversity of illumination existing with any system of lighting, a given minimum means a much higher maximum and average.

CONSTANCY AND UNIFORMITY.—A flickering or variable light is always a cause of irritation to the operative, and may be the cause of accidents. Under this heading attention is drawn to the importance of adequately lighting the whole of the plane of work, including parts which are regularly but infrequently used. It sometimes happens, for instance, that whilst the work itself may be excellently lighted the place where the tools are kept ready for use is neglected. Uniformity of lighting is especially necessary on machine work of a kind which requires the operative to give attention to more than one small part of the machine.

PREVENTION OF GLARE.—Direct glare from the source of lighting can, it is stated, be avoided either by the proper shading of the light sources or by fixing them at a sufficient height above the worker, the power or number of the sources being, if necessary, increased so that the illumination on the work is not diminished.

Indirect glare, which is very liable to occur when the material worked on is polished, may be remedied by suitable adjustment of the light source in relation to the work and the eye of the worker or by careful shading of the source with translucent material. In the case of very fine work on highly polished material a wrapping of tissue paper round the light source or the placing of a globe of tinted water between the light source and the work may sometimes be found effective.

AVOIDANCE OF SHADOW.—The shadow may be that of the worker himself, of parts of the machinery or plant, or of the material being worked upon. The remedy recommended is either suitable shading or adjustment of the lamp or increasing the illumination over the part of the plane of work affected so as to neutralise the shadow. In many instances, especially when the colour of the material worked on may vary from time to time, it is said to be advantageous to make the sources adjustable so that the worker may fix them at any convenient height or angle.

METHODS OF ARTIFICIAL LIGHTING.—The following examples of alternative methods of securing adequate and suitable illumination for carrying on fine work are given:—

LOCAL LIGHTING.—An adjustable light source, whether electric or gas lamps, is placed at the left hand of the operative at a height of two feet or less from the field of work, and is so shaded as to screen the lamp from the eyes and to cast the light down upon the work, the illumination being increased by the white under-surface of the shade or where necessary by a special reflector.

GENERAL LIGHTING.—A bright diffused light is equally distributed over the room, the lamps being of sufficient power and number to produce an adequate illumination when fixed at a height of seven feet above the workbench and the machines. The sources are screened from the eye by means of shades of a sufficient depth and of a shape to reflect the light downwards (direct lighting) or by translucent shades suspended below the lamps casting some of the light upon a white ceiling which reflects it (semi-indirect lighting). Where the work requires an illumination approximating as nearly as possible to daylight, a translucent shade completely encasing the lamps has been found very efficient

* The measurements are to be made on a horizontal plane at floor level.

and pleasant. Where general lighting alone is adopted, there is in most instances little risk of the floor of the room being insufficiently illuminated, since the same light must serve also for the carrying on of the work; but with localised general lighting there is always danger of some parts of the room being neglected, whilst with strong local lighting the contrast between the brightly illuminated work and the comparatively dark surroundings necessitates careful attention to the general lighting of the room. Whatever be the light required for the work, every part of the room in use should be illuminated sufficiently for obstacles, dirt, and waste to be clearly visible, whilst in all industries, particularly those in which the work involves danger, the general illumination should always be sufficient to avoid risk of accidents. Ample illumination for the requirements of the work itself must be provided beyond the minimum needed for these purposes.

INADEQUATE LIGHTING IN DAYTIME.—The following devices are recommended for securing additional light in daytime :—

(1) The windows should be of adequate size and extend to as near the ceiling as practicable.

(2) They should be kept clean, and free from unnecessary obstruction within.

(3) Vertical light can be reflected into the room by means of reflectors or prismatic glass.

(4) It may be possible to whiten the surface of an external wall or building which obstructs the light.

(5) The inside walls and ceiling should be white or nearly white.

(6) The positions of the permanent working points should be so adjusted in relation to the windows and to internal obstructions of whatever kind to secure as far as practicable adequate daylight for each.

INADEQUATE ARTIFICIAL LIGHTING. — The chief causes of unsatisfactory artificial illumination are classified as follows :—

The Provision of too few or too weak Light Sources.—This is specially liable to occur in the general lighting of large engineering works, foundries, gangways, and passages.

Antiquated Methods of Lighting.—Instances are still found of the use of antiquated systems which can only be justified in special circumstances. In some engineering processes, for instance (*e.g.*, work on boring machines and power hammers), gas jets are still commonly employed on account of the rough usage to which the local light sources are necessarily subjected. Gas jets are objectionable in many ways—they vitiate the air to an unnecessary extent, are liable to flicker, and are so uneconomical that the small capital outlay required to replace them by a modern system is rapidly repaid by the greater efficiency and diminution in running expenses.

Inadequate Supply.—Inadequate illumination is sometimes caused by the diminished pressure in the gas mains during the period of maximum consumption, and, where the electrical energy is generated on the premises, by the installation of a dynamo or engine of insufficient output.

Neglect of Upkeep.—Considerable loss of light may result from deterioration of gas mantles and lamps, and from the deposition of dust.

Inside Obstruction.—Inside light obstruction may occur in factories where large and complicated machines are used, or where the sources are situated over a travelling crane or other obstruction. Some cranes have affixed to their under surface lamps which travel with them, and great improvement would result if this method could be adopted more generally.

Shadows and Placing of Lights.—Loss of light frequently arises from the sources being so placed as to cause a shadow to be thrown on the work. This may be that of the worker himself, or of some parts of the machine, or of the material being worked upon.

ILLUMINATION REQUIRED.—The illumination required for any given operation depends not only on the nature of the process and the degree of detail to be made visible but also on the reflecting power of the material worked on; and, further, after a certain limit is reached increase of illumination has no effect in assisting the eye to distinguish detail.

RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the building trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur :—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Masons' & Labourers.	Bricklayers' Labourers.	Plasterers' Labourers.
Aberdare	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Accrington	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/ ½		1/7½	
Altrincham	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Ashton-under-Lyne	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Barnsley	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Barrow-in-Furness	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Barry	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Bath	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½		1/5	
Bedford	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½		1/4	
Birkenhead	2/2	2/2	2/2	2/2	2/2	2/2	2/2		1/9½	
Birmingham	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Bishop Auckland	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Blackburn	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Blackpool	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Bolton	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Bournemouth	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½		1/4	
Bradford	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Bridgwater	1/7	1/7	1/7	1/7	1/7	1/7	1/7		1/3	
Brighton	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½		1/4	
Bristol	2/0½	2/0½	2/0½	2/0½	2/ ½	2/ ½	2/0½		1/7½	
Burnley	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Burton-on-Trent	1/11	1/11	1/11	1/11	1/11	1/11	1/11		1/6	
Bury	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Cambridge	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½		1/4	
Cardiff	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Chatham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½		1/3½	
Chelmsford	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½		1/4	
Cheltenham	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½		1/5	
Chester	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Chesterfield	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Colchester	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½		1/4	
Coventry	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Crewe	1/11	1/11	1/11	1/11	1/11	1/11	1/11		1/6	
Darlington	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Derby	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Doncaster	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Dudley	1/11	1/11	1/11	1/11	1/11	1/11	1/11		1/6	
Durham	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
East Glam. and Mon. Valleys	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Exeter	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/7½		1/4	
Folkestone	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½		1/3½	
Gloucester	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½		1/5	
Grantham	1/11	1/11	1/11	1/11	1/11	1/11	1/11		1/6	
Grays	2/0½	2/0½	2/0½	2/0½	2/0½	2/1	1/11½		1/7½	
Grimsby	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Great Yarmouth	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½		1/3½	
Guildford	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½		1/4	
Halifax	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Harrogate	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Hartlepools	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Hastings	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½		1/3½	
Hereford	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½		1/5	
Huddersfield	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Hull	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Ipswich	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½		1/4	
Lancaster	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Leamington Spa	1/11	1/11	1/11	1/11	1/11	1/11	1/11		1/6	
Leeds	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Leicester	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Lichfield	1/11	1/11	1/11	1/11	1/11	1/11	1/11		1/6	
Lincoln	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Liverpool	2/2	2/2	2/2	2/2	2/2	2/2	2/2		1/9½	
Llanelly	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
London	2/0½	2/0½	2/0½	2/0½	2/0½	2/1	1/11½		1/7½	
Loughborough	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Luton	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½		1/4	
Maidstone	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½		1/3½	
Manchester	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Mansfield	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Merthyr Tydfil	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Middlesbrough	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Newcastle-on-Tyne	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Newport, Mon.	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Northampton	1/11	1/11	1/11	1/11	1/11	1/11	1/11		1/6	
Norwich	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½		1/4	
Nottingham	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Oakham	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½		1/5	
Oldham	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Oxford	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½		1/4	
Plymouth	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/9½		1/6	
Pontypridd	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Portsmouth	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½		1/4	
Preston	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Reading	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½		1/4	
Rochdale	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Rochester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½		1/3½	
Rugby	1/11	1/11	1/11	1/11	1/11	1/11	1/11		1/6	
St. Albans	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½		1/4	
St. Helen's	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Scarborough	1/11	1/11	1/11	1/11	1/11	1/11	1/11		1/6	
Sheffield	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Shrewsbury	1/11	1/11	1/11	1/11	1/11	1/11	1/11		1/6	
Southampton	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½		1/4	
Southend-on-Sea	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½		1/4	
Southport	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
South Shields	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Stockport	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Stockton-on-Tees	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Stoke-on-Trent	1/11	1/11	1/11	1/11	1/11	1/11	1/11		1/6	
Stroud	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8		1/4	
Sunderland	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Swansea	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Taunton	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½		1/4	
Torquay	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½		1/4	
Tunbridge Wells	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½		1/4	
Wakefield	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Walsall	1/11	1/11	1/11	1/11	1/11	1/11	1/11		1/6	
Warrington	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
West Bromwich	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Wigan	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Windsor	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½		1/4	
Wolverhampton	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½		1/7½	
Worcester	1/11	1/11	1/11	1/11	1/11	1/11	1/11		1/6	
York	1/11	1/11	1/11	1/11	1/11	1/11	1/11		1/6	

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where quantities, forms of tender, &c., may be obtained.

BUILDING AND PAINTING.

SEPTEMBER 23.—**Altrincham.**—EXTENSIONS.—Erection of extensions to the County High School for Boys, Altrincham, for the Cheshire C.C. Mr. H. Beswick, County Architect, Chester. Deposit £1 1s.

SEPTEMBER 23.—**Belfast.**—HOUSES.—Erection of houses at Dovegate-road, for the T.C. Messrs. W. H. Stephens & Sons, 13, Dovegate-square, North Belfast. Deposit £5 5s.

SEPTEMBER 23.—**Durham.**—COTTAGE, &C.—Erection at Neville's Cross Training College: (1) Cottage; (2) fencing and gates, for the Durham C.C. Mr. F. Willey, 34, Old Elvet, Durham.

SEPTEMBER 23.—**Laughton.**—CONVERSION.—Conversion of offices at Laughton-en-le-Morthen: Thurcroft Temporary Council School, for the West Riding E.C. West Riding Education Architect, County Hall, Wakefield.

SEPTEMBER 24.—**East Claydon.**—REPAIRS.—Repairs and adaptation to farm buildings at Monkomb Farm, East Claydon, for the Bucks C.C. Mr. G. M. Odam, County Land Agent, 21, Walton-street, Aylesbury.

SEPTEMBER 24.—**Goldthorpe.**—WAREHOUSE.—For all trades required for erection of a warehouse. Mr. P. A. Hinchliffe, architect, 14, Regent-street, Barnsley.

SEPTEMBER 24.—**Kiveton Park.**—BRIDGE.—For strengthening bridge over Anstor Brook, for the West Riding Highways Committee. Mr. H. R. Heyworth, Surveyor, County Hall, Wakefield. Deposit £1.

SEPTEMBER 26.—**Greenwich.**—BUILDING.—Erection of a foreman's dwelling at Greenwich Fuel Research Station, for the Commissioners of H.M. Works, &c. Contracts Branch, H.M. Office of Works, King Charles-street, S.W.1. Deposit £1 1s.

SEPTEMBER 26.—**Kent.**—BUILDING.—Construction of an engine house and well house connected to the existing engine house, together with the formation of a new approach road, paths and drainage &c., at Kent Gate, West Wickham, in the Rural District of Bromley, Kent, for the Metropolitan Water Board. Mr. H. E. Stilgoe, Chief Engineer, Offices of the Board. New River Head, 173, Rosebery-avenue, London, E.C. 1. Deposit £5.

SEPTEMBER 26.—**Ladybank.**—POST OFFICE.—Erection of a new post office at Ladybank. Architect, H.M. Office of Works, 4-5, Drumsheugh-gardens, Edinburgh. Deposit £1 1s.

SEPTEMBER 26.—**Sheffield.**—ALTERATIONS.—Alterations, including new book-cases and fittings, at the Central Lending Library, Surrey-street, for the T.C. Mr. F. E. P. Edwards, City Architect, Town Hall, Sheffield.

SEPTEMBER 27.—**Kirkburton.**—CINEMA.—Erection of new cinema hall, Kirkburton. Mr. J. Ainley, architect, 3, Chapel Hill, Huddersfield.

SEPTEMBER 27.—**Windsor.**—PAINTING.—For painting and other work at the Police and Fire Stations, for the T.C. Borough Surveyor, 16, Alma-road, Windsor.

SEPTEMBER 28.—**London.**—GLAZING.—Renewal of roof glazing to lantern lights over laundry and boiler house block at the Grove Hospital, Tooting Graveney, S.W., for the Metropolitan Asylums Board. Office of the Board, Embankment, E.C.4. Deposit £1.

SEPTEMBER 28.—**London, N.W.**—ROOFING.—For covering the roof (area about 3,333 super yards) of Kidderpore Reservoir, Platts-lane, Finchley-road, N.W., in granolithic, for the Metropolitan Water Board. The Clerk, Offices of the Board (Room 150), Engineer's Dept., New River Head, 173, Rosebery-avenue, E.C.1.

SEPTEMBER 28.—**Spenborough.**—COMPRESSOR HOUSE.—Various trades for erection of compressor house, for the U.D.C. Mr. A. L. Jennings, Engineer, Gasworks, Cleckheaton.

SEPTEMBER 28.—**Walthamstow, E.17.**—ALTERATIONS AND ADDITIONS.—Alterations and additions to the Public Slipper Baths, High-street, Walthamstow, for the U.D.C. Mr. J. Williams Dunford, architect, 8, Cleveland Park-avenue, Walthamstow. Deposit £2.

SEPTEMBER 28.—**Warrington.**—PAINTING.—External painting of various buildings at the cemetery, for the T.C. Mr. Andrew M. Ker, Borough Engineer, Warrington.

SEPTEMBER 29.—**Langholm.**—HOUSES.—The erection of four blocks of two houses each, for the T.C. Mr. G. Irving Bell, Town Clerk, Langholm. Deposit £1.

SEPTEMBER 30.—**Edinburgh.**—ROOFING.—Upkeep of roofs for one year, for the T.C. Mr. John Stewart, Executive Officer, Education Offices, Castle Terrace, Edinburgh.

SEPTEMBER 30.—**Stockton-on-Tees.**—SUB-STATION.—Erection of a sub-station, for the T.C. Engineer, Borough Hall, Stockton-on-Tees.

OCTOBER 1.—**Davyhulme.**—MEMORIAL.—Plans and tenders for war memorial, in the form of a clock tower, to be erected in Davyhulme Parish, at a total cost not exceeding £500. Mr. James W. Lees, Hon. Secretary, 4, Bent-terrace, Davyhulme, near Manchester.

OCTOBER 3.—**Droxford.**—PAINTING.—For painting and repairs to the exterior part of the Droxford Workhouse, for the Board of Guardians. Mr. H. G. Pearson, Clerk, Bishop's Waltham, Hants.

OCTOBER 3.—**Hull.**—ADAPTATION.—For adaptation of Hull Inland Revenue Office, 58-59, Market-place, for the Commissioners of H.M. Works. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W.1. Deposit, £1 1s.

OCTOBER 3.—**Rotherham.**—ALTERATIONS.—Alterations at Rotherham Post Office, for H.M. Office of Works. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W. 1. Deposit £1 1s.

OCTOBER 3.—**Ruislip-Northwood.**—PAINTING AND OTHER WORK.—Painting and other work necessary to put into complete repair, structural and otherwise, the Council Offices, Northwood. Mr. H. R. Metcalfe, Council Offices, Northwood. Deposit £1 1s.

OCTOBER 3.—**Southend-on-Sea.**—PAINTING.—For cleaning and painting ward block at Smallpox Hospital, Sutton-road, for the C.B. Mr. R. H. Dyer, Borough Engineer and Surveyor. Deposit £1.

OCTOBER 3.—**Weymouth.**—HOUSES.—Erection of 30 houses for the Borough of Weymouth and Melcombe Regis. Mr. Frederick Fernihough, Town Clerk, Municipal Offices, Weymouth. Deposit £2 2s.

OCTOBER 4.—**Bath.**—ALTERATIONS.—Alterations to the Somerset Boys' Home, Bath. Mr. A. J. Pictor, architect, Bruton. Deposit £2 2s.

OCTOBER 5.—**Llandaff.**—CONVENIENCE.—Erection of public convenience near Llandaff Station, for the R.D.C. Mr. William Farrow, surveyor, Park House, 20, Park-place, Cardiff.

OCTOBER 5.—**Waltham Cross.**—HOUSES AND SEWERS.—Construction of about 365 yards of 9 in. and 12 in. sewer, with manholes, &c., and erection of 36 houses for Cheshunt U.D.C. Mr. J. E. Sharpe, Engineer and Surveyor to the Council, Manor House, Cheshunt. Deposit £1 1s. for each contract.

* OCTOBER 6.—**Balham S.W.12.**—ALTERATIONS.—For alterations in connection with new obstetric wards at St. James' Hospital, for the Guardians of Wandsworth Union. Mr. F. J. Curtis, Clerk, Union Offices, St. John's Hill, S.W.18. Deposit £2.

OCTOBER 6.—**Brynbanon.**—COTTAGES, &C.—Erection of three cottages and buildings and adaptation of existing buildings, for the Merioneth C.C. Mr. R. C. Jones, Architect, County Offices, Dolgelley.

OCTOBER 6.—**Rotherhithe, S.E.**—COTTAGES.—Erection of three cottages in Orange-place, Lower-road, for Bermondsey B.C. Mr. Frederick Ryall, Town Clerk, Town Hall, Spa-road, S.E.16. Deposit £2 2s.

OCTOBER 8.—**Edinburgh.**—HOUSES.—Erection of 44 two-story houses (22 blocks) at Longstone housing site, for the T.C. Mr. David M'Arthy, architect, 6, Albyn-place, Edinburgh.

OCTOBER 15.—**Ballop.**—BUILDING.—Erection of a temporary school building in asbestic material to accommodate 120 pupils, at Bishop's Castle, for the C.C. Higher Education Office, County Buildings, Shrewsbury. Deposit £3 3s.

* OCTOBER 24.—**Hendon, N.W. 4.**—DWELLINGS.—For the completion of certain Artizans' Dwellings at Brent-hill Farm Estate, for the U.D.C. Mr. George Hornblower, F.R.I.B.A., 2, Devonshire-terrace, Portland-place, W. 1. Deposit £10 10s.

NO DATE.—**Denton.**—ALTERATIONS.—Alterations and additions to the Golf-house of the Denton Golf Club, Ltd. Messrs. Thorpe & Collier, architects, 66, Deansgate, Manchester. Deposit £1 1s.

NO DATE.—**Haxby.**—EXTENSION.—Extension of premises of the Haxby and District Working Men's Club. Secretary (Building Committee), W.M. Club, North View, Haxby.

FURNITURE, MATERIALS, etc.

SEPTEMBER 24.—**Bucklow.**—MATERIALS.—Supply of granite setts, broken granite, &c., to the R.D.C. Mr. R. C. Cordon, Highway Surveyor, Knutsford.

SEPTEMBER 26.—**Egypt.**—WATER TUBING, &C.—Supply of 5,500 ft. of 2 in. galvanised W.I. water tubing and fittings, to the Egyptian War Dept. Inspecting Engineer, Egyptian Government, Queen Anne's-chambers, S.W.

SEPTEMBER 26.—**London.**—PARK SEATS.—Supply and delivery to various parks, &c., of about 300 standard seats of British manufacture and constructed of the best quality pitch pine or English oak, for the L.C.C Chief Officer, Parks Department, L.C.C., 19, Charing Cross-road. S.W.

SEPTEMBER 26.—**Maesteg.**—MATERIALS.—Supply to U.D.C. of cement, ironmongery, stoneware pipes, bricks, stone flagging, kerb and channel, cast iron pipes, iron castings, lime mortar, &c., Mr. Samuel J. Harpur, Surveyor, Council Offices, Talbot-street, Maesteg.

SEPTEMBER 26.—**Woodford.**—MATERIALS.—For team labour and road materials. Mr. W. Farrington, Surveyor, Council Offices, Woodford Green.

SEPTEMBER 29.—**Manchester.**—STORES.—For the supply of stores to the Lancashire and Yorkshire Railway Co. Mr. Sharp, Stores Department, Osborne-street, Manchester.

SEPTEMBER 30.—**Durham.**—MATERIALS.—Supply to the C.C. of road materials. Mr. A. E. Brookes, County Surveyor, Shire Hall, Durham.

ENGINEERING, IRON AND STEEL

SEPTEMBER 23.—**Manchester.**—FENCING.—For wrought-iron fencing at Iron-street Recreation Ground, Miles Platting, for the T.C. City Engineer's Office, Town Hall, Manchester. Deposit £2 2s.

SEPTEMBER 26.—**Grange.**—WATER MAINS.—Supply of 1,300 yds. of 4 in. cast-iron water pipe and specials. Mr. T. Huddleston, Surveyor, Grange.

SEPTEMBER 26.—**Walsall.**—PIPES.—Supplying and laying of about 300 tons of cast-iron pipes, 12 in. and 26 in. dia., and for the supply only of about 20 tons of cast-iron pipe 24 in. dia., for the T.C. Mr. E. M. Lacey, 19, Victoria-street, Westminster. Deposit £3.

SEPTEMBER 28.—**Knottingley.**—BRIDGE.—Reconstruction of superstructure of bridge carrying road over railway, for the Lancashire & Yorkshire Railway Co. Mr. R. C. Irwin, Secretary, Hunts Bank, Manchester.

SEPTEMBER 29.—**Antwerp.**—BRIDGE.—Pivoting iron bridge over railway line for the Municipal Council. Department of Overseas' Trade, 35, Old Queen-street. S.W.

SEPTEMBER 30.—**London.**—WIRE AND CABLE. Supply to the Commissioners of His Majesty's Works, &c., of electric wire and cable. Controller of Supplies, H.M. Office of Works, &c., King Charles-street, Westminster, London, S.W. 1.

OCTOBER 1.—**Scunthorpe.**—GASHOLDER.—For supply and erection of 2-lift gasholder and tank of 500,000 c.f. capacity, either in steel or reinforced concrete. S. Moore, Engineer, Gasworks, Scunthorpe.

OCTOBER 4.—**Ystalyfera.**—BRIDGE.—Reconstruction of bridge over Swansea Canal, for the Great Western Railway Co. Engineer, Neath Station.

OCTOBER 5.—**Australia.**—LATHES.—Supply to the Victorian Railway Commissioner of double-wheel lathes for Jolimont workshops. Department of Overseas' Trade, 35, Old Queen-street, S.W.

OCTOBER 6.—**Salford.**—TANKS.—Supply and erection of two cast-iron liquor tanks, for the Gas Department. Gas Engineer, Gas Offices, Bloom-street, Salford. Deposit £1 1s.

OCTOBER 7.—**Glasgow.**—INTAKE CHAMBER, &C.—Erection of No. 2 Intake Chamber, screen house and culvert, &c., at Dalmarnock new generating station, for the T.C. Electrical Engineer, 75, Waterloo-street, Glasgow.

OCTOBER 7.—**London.**—RAILWAY MATERIALS.—Supply to the Bombay, Baroda & Central India Railway Co. of: Class A.—(1) Dog spikes; (2) steel materials. Class B.—(1) Fencing materials; (2) steel fish-bolts, nuts and washers; (3) wrought iron; (4) galvanised steel or ironwork. Class C.—Pig iron. Mr. S. G. S. Young, Secretary, The White Mansion, 91, Petty France, S.W.1. Charges £1 Class A, 10s. Class B., 5s. Class C.

OCTOBER 10.—**Australia.**—TRUSS SPANS.—Supply of three steel truss spans for bridge over River Murray, for the Victorian Railway Commissioners. Department of Overseas' Trade, 35, Old Queen-street, S.W.

OCTOBER 15.—**Wallasey.**—LANDING STAGE.—Construction of new floating goods landing stage, approximately 320 ft. in length and 80 ft. in breadth, for the T.C. Messrs. Wilton & Bell, engineers, Westminster Chambers, 1, Crosshall-street, Liverpool. Deposit £5 5s.

OCTOBER 31.—**Australia.**—BRIDGE WORK.—Supply of metal work for lift bridge over the Murray River, for Department of Public Works, Sydney. Department of Overseas Trade, 35, Old Queen-street, S.W.

OCTOBER 31.—**Madras.**—C.I. PIPES, &C.—Supply and delivery of cast-iron pipes, special castings, sluice valves, &c. for Madras Corporation. Mansergh & Sons, agents, 5, Victoria-street, Westminster, S.W 1. Deposit Rs. 500.

NOVEMBER 16.—**Littleton (Middlesex).**—PUMPS.—Supply and erection of pumping machinery at Littleton, Middlesex, for the Metropolitan Water Board. Mr. Henry E. Stilgoe, Chief Engineer, 173, Rosebery-avenue, E.C. 1. Deposit £3 3s.

DECEMBER 31.—**Siam.**—STEELWORK.—Supply of superstructures of steel railway bridges, for the Siamese State Railways. Messrs. C. P. Sandberg, 40, Grosvenor-gardens, London, S.W. 1. Charge 10s.

NO DATE.—**Brighton.**—PIER REPAIRS.—Concreting under water and steelwork, for the West Pier Company. Mr. M. Noel Ridley, Standard House, Cardigan-road, Leeds.

NO DATE.—**Dudley.**—RESERVOIRS.—Constructing two water-tight reinforced concrete covered-service reservoirs of 1 million gallons and 5 million gallons capacity respectively, at Dudley, for the South Staffordshire Waterworks Co. Mr. Fred. J. Dixon, Engineer-in-Chief, 26A, Paradise-street, Birmingham.

ROAD, SANITARY, AND WATER WORKS.

SEPTEMBER 24.—**Batley.**—CULVERT.—Reconstruction of Hey Beck culvert over Hey Beck, Batley, for the West Riding Highways' Committee. Mr. H. R. Hepworth, West Riding Surveyor. Deposit £1.

SEPTEMBER 24.—**Wycombe.**—FLINTS.—Supply of good hard hand-picked field flints for use on roads, for the R.D.C. Mr. A. L. Grant, Highway Surveyor, 15, High-street, High Wycombe.

SEPTEMBER 26.—**Manchester.**—PAVING.—Draining, paving (with grit setts), flagging, &c., of Derby-street, Cheetham, and of Heald-place, Rusholme, for the T.C. Paving, &c., Department (District Surveyor's Office), Town Hall, Manchester. Deposit £1 1s.

SEPTEMBER 26.—**Uxbridge.**—ROAD WORKS.—Forming Road and Footway, laying surface drainage, &c., in extension of Whitehall-road into Uxbridge, Middlesex, for the U.D.C. Mr. H. M. Blackwell, Clerk, 121, High-street, Uxbridge.

SEPTEMBER 26.—**Westhampnett.**—STEAM ROLLING.—For steam rolling upon the roads throughout district, for R.D.C. Mr. W. D. Rasell, Clerk, Pallant House, Chichester.

SEPTEMBER 27.—**Birdwell.**—BOWLING GREEN.—Laying bowling green for the Birdwell Working Men's Club and Institute. Mr. James Matthewman, Secretary, Birdwell, near Barnsley. Deposit £1.

SEPTEMBER 27.—**Fareham.**—SANITARY.—House scavenging and emptying of cesspools, &c., in the Parish of Crofton, for the R.D.C. Mr. Herbert A. Watts, Clerk, 97, West-street, Fareham.

SEPTEMBER 28.—**St. Andrews.**—ROADS, &c.—Construction of new roads and sewers, &c., in connection with the housing scheme No. 1 at Bassaguard (50 houses), for the T.C. Mr. Wm. Watson, Burgh Engineer, St. Andrews. Deposit £1 1s.

SEPTEMBER 28.—**Sale.**—SANITARY.—Conversion of privies to water-closets and ashbins in various parts of the township, for the U.D.C. Sanitary Inspector, Town Hall, Sale.

SEPTEMBER 29.—**Edinburgh.**—PAVING.—Re-paving at Bonnington-road, for the T.C. City Road Surveyor, City Chambers, Edinburgh.

SEPTEMBER 29.—**Wycombe.**—BOREHOLE.—Sinking of a bore hole, 9½ in. diameter, from the bottom of the existing public well to a depth of 100 ft. (the well is 365 ft. deep) for the R.D.C. Messrs. Lucas & Pyke, 39, Victoria-street, Westminster, S.W.1. Deposit £1.

SEPTEMBER 30.—**Kirkburton.**—ROADS.—Repairs to George-street, for the U.D.C. Mr. Fred Hobson, Surveyor, Council Offices, Kirkburton.

SEPTEMBER 30.—**Lymm.**—SANITARY.—Carrying out of sanitary repairs and drainage and other works at certain properties in Higher-lane, Rush Green, Massey Brook-lane and Newfield, Lymm, for the U.D.C. Surveyor, Council Offices, Lymm.

SEPTEMBER 30.—**St. Mellons.**—ROADS.—Construction of roads in connection with Rogerstone housing scheme, for the R.D.C. Messrs. T. Morgan & Partners, engineers, 23, Gelliwastad-road, Pontypridd. Deposit £2 2s.

OCTOBER 1.—**Morley.**—ROADS.—Formation of paths and fences, at Victoria-road housing site, for the T.C. Mr. F. Turner, Borough Engineer, Town Hall, Morley

OCTOBER 5.—**Bandeath.**—SEWER.—Constructing main sewer at Bandeath Royal Naval Ordnance Depot, for H.M. Office of Works. Architect, H.M. Office of Works, 4–5, Drumsheugh-gardens, Edinburgh. Deposit £1 1s.

NOVEMBER 17.—**Uruguay.**—WATER AND DRAINAGE WORKS.—Construction of water and drainage works at San Jose. Department of Overseas Trade, 35, Old Queen-street, S.W.

Competitions.

(*See Competition News, page 372.*)

Auction Sales, Tenders, etc.

SEPTEMBER 27.—**London, E.C.**—Mr. Frederick Brown Gurney, of the firm of Messrs. Rutley, Vine & Gurney, the person appointed by Mr. Justice Peterson, will sell, at the London Auction Mart, the estate of Charles Townley (deceased), situate Orwell, Cambs. Auctioneers, 6, George-street, Euston-road, London, N.W.1.

SEPTEMBER 27.—**London, S.W.**—BUILDING MATERIALS.—Messrs. Veryard & Yates will sell, by order of Mr. J. Mayo, building materials, at 110, Union-road, Clapham-road, S.W.

SEPTEMBER 28.—**East Acton.**—Messrs. Eydmann, Street & Bridge will sell, by order of Acton U.D.C., tarpaulins and tools, various temporary sheds, timber, contractors plant, &c., at the Stud Farm. Auctioneers, 177, High-street, Acton.

★SEPTEMBER 28.—**Sussex.**—Messrs. Harris & Gillow will sell by direction of the Disposal Board at No. 1 Battalion Lines, Shoreham Camp, camp buildings of various sorts and numerous building material. Auctioneers, Shoreham-by-Sea and 21, North Audley-street, Grosvenor-square, W.1.

SEPTEMBER 28 (and following days).—**Helmdon (near Brackley).**—Messrs. Joseph Hibbard & Sons will sell, by order of the Controller, Timber Supply Department, at Helmdon Wood Mill (adjoining Helmdon Station, G.C.R., and 3½ miles from Brackley) saw mill, plant and timber stock, stores, &c. Auctioneers, 15, Newington-green, Islington, London, N. 16.

★SEPTEMBER 29.—**Shepherd's Bush, W.**—Messrs. Henry W. Figg & Son will sell, without reserve, at 190, 192, Goldhawk-road, plant, machinery, stores, &c. Auctioneers, 20, Budge-row, Cannon-street, E.C.4.

★OCTOBER 20.—**Leicester.**—For sale by private treaty the business of an asphalter formerly carried on by William Nunn, deceased. Mr. P. W. Lawrie, Incorporated Accountant, 5, Granby-street, Leicester.

Public Appointments.

SEPTEMBER 24.—**Hoddesdon.**—Temporary Surveyor and Inspector of Nuisances required by the U.D.C. Mr. F. W. Mutton, Clerk to the Council, Hoddesdon, Herts.

SEPTEMBER 26.—**London, S.W.1.**—Visiting Lecturer on (*a*) Building Laws, (*b*) Valuation, and (*c*) Sanitary Science, required at the L.C.C. Westminster Technical Institute, Vincent-square, S.W.1. Education Officer, T.1A, New County Hall, S.E.1.

SEPTEMBER. — **London, S.E. 1.** — TEACHER.— The Governors require in September the services of a Teacher of Builders' Quantities for one evening a week. Mr. C. T. Millis, Principal, Borough Polytechnic Institute, Borough-road, London, S.E. 1.

Housing Progress in Scotland.

The following figures show the progress that has been made in State-aided housing schemes in Scotland to August 31, 1921:—Permanent houses completed, 2,495; temporary houses completed, 583; reconstructed houses completed, 67; houses built under the private subsidy schemes, 807. In addition, there are 13,466 houses under construction, of which 1,843 are being built by private persons with the aid of the Government subsidy. The total amount paid by the Scottish Board of Health in respect of the 807 houses completed under the private subsidy schemes is £195,526 13s. 4d.

THE YORKSHIRE FEDERATION OF BUILDING TRADES' EMPLOYERS.

AT the conclusion of the monthly meeting of the Yorkshire Federation of Building Trades' Employers, held in the Scarborough Town Hall, last week, and presided over by Alderman W. H. Birch, J.P. (President), the Mayor of Scarborough accorded the delegates a civic welcome. In the course of his remarks, he said the building trade had suffered and was suffering to-day from a commercial paralysis. There was no other trade in the country which had so great a demand for its output as the building trade, and there was no other trade in the country which had so suffered from commercial paralysis. They were threatened this winter with a state of unemployment which this country had never before had to deal with, even in the black days of the past. Why was there this general unemployment to-day? The whole world was seeking for the products of labour, and our internal trade was calling for a greater output than could be provided, because of the unsound economic conditions. Builders had suffered more in this respect than any other section. The cost of labour must be brought in line with the economic conditions of the country. Labour now was highly organised—and organised by leaders who could not lead, and who did not see the future before them. He thought it should be made not only a rule but a law of the country that no man should be qualified to be a leader of an industry who had not passed an examination in economics. They had an example of organised labour and leaders in the disastrous strike in the coal trade in the spring. The men were listening for the voice of their leaders, but heard nothing until they had been led into the ditch. The secret of unemployment was the economic conditions that caused the products which the nation required to be so high in price that the nation could not pay for them.

Alderman Birch, in moving a vote of thanks to the Mayor, said building to-day could not be carried on on an economic basis. Until that could be done the outlook for the trade was dreary. He thought the time would come when the trade would receive a real impetus.

Mr. A. J. Forsdyke (Sheffield) seconded, and said he thought the enormous cost of building houses for the working classes was brought about very materially by the interference of the Government. He believed that if the building of working-class houses had been left to builders the state of chaos which existed to-day would not have occurred..

AIR POLLUTION BY SOOT.

IN a paper read before the Chemical Section of the British Association last week, Dr. J. S. Owens (Secretary of the Meteorological Office's Advisory Committee on Atmospheric Pollution) said it was found that in London the chief impurities were due to domestic fires, these being accountable for twice as much as that produced from factory chimneys. He estimated that during a fog 200 tons of solid impurity were suspended in minute particles over the London area. He had calculated that in winter the domestic fires of London produced over 200 tons of soot daily between the hours of 6 a.m. and 9 a.m., the period during which the usual rapid increase of impurity in the air occurred. It was clear, therefore, that the soot in a dense fog was quite within the capacity of the domestic fires of London to produce. Sometimes there was an invasion of impurities from outside. In the recent drought the records showed occasional quite abnormal increases. Subsequent investigations showed that these were due to the smoke from fires on commons and similar places surrounding London. Ordinary London air, when examined microscopically, was found to contain minute black particles, which behaved almost like a gas so far as penetrating power was concerned. Of the suspended impurity only about 30 per cent., instead of the whole, was retained in the air passages, the remainder reaching the lungs.

In the subsequent discussion, says *The Times*, it was pointed out that although domestic fires might be responsible for the major part of the impurity in towns like London, the case was different in many manufacturing towns. During the coal strike the absence of impurities made an extraordinary difference in the atmosphere and in the pleasure of living. It was urged that although the cost of altering domestic fires would be prohibitive, there was no good reason why manufacturers should not be compelled to prevent the emission of black smoke, as there were many satisfactory devices for the purpose. The existing law was held to be insufficient in itself and not carried out with sufficient stringency. It was suggested that the British Association should forward a memorial to the Minister of Health, calling his attention to the need for further legislation, or at least for more effective administration of the existing law.

FRENCH WEST AFRICAN SUPPLIES OF TIMBER.

Various companies, which hold forest concessions in the Gaboons, are, announces the Department of Overseas Trade, about to form a syndicate in order to find a common solution of the problems raised by the working of these concessions. The syndicate has the support of the Minister of the Colonies and the Governor-General of French West Africa. Among the more important companies which have joined the syndicate are the Compagnie Forestière Sangha-Cubanghi, 5, Rue de la Rochefoucauld, Paris, the Société Agricole, Forestière et Industrielle pour l'Afrique, 15, Rue Richepanse, Paris, and the Compagnie d'Exploitations Forestières Africaines, 41, Rue Taitbout, Paris.

The Compagnie d'Exploitations Forestières Africaines holds a concession of about 200,000 hectares and is particularly interested in the tree known as Okoume, which, before the war, was placed on the European market by the Germans. The Gaboons exported in 1913 135,000 tons of this timber, of which three-quarters were sent to Germany and Holland, 24,700 tons to England, and only 15,000 tons to France. As German purchasers of Okoume have formed a syndicate it is highly desirable that the tree should find a market in France. It could be used for furniture, carpentry, &c., and even in the decoration of railway carriages and passenger steamships. It can serve the same purpose as mahogany, and its price is much lower.

The Société Agricole, Forestière et Industrielle has made an effort to introduce in France various woods from the Gaboons for use in cabinet making. It has succeeded in interesting French and German buyers in these woods, among which are high-quality mahogany and other timber which can replace teak, oak and walnut, and can be supplied at prices which would admit of their general use in carpentry. Their durability is recognised to be equal or even superior to oak, and far superior to Scandinavian fir.

The Compagnie Forestière Sangha-Cubanghi has devoted itself particularly to the working of timber for building purposes. It is the only one of the three companies mentioned which has established plant for using Gaboon timber in the colony itself. It is amazing to learn that the French African colonies, instead of taking advantage of their immense forests, usually import timber for building from Sweden and Norway, and that until recently the Government authorities would give no assistance to any attempt to use African wood.

The three companies, and the other firms which will form the syndicate, are endeavouring to obtain freight rebates from the shipping companies, as freight is one of the most important factors in the cost price of timber imported into France from the French colonies. If this problem is solved it would be easy to supply sufficient timber to meet the requirements of France, which cannot be met by her own forests. They only supply 3½ million cubic metres a year, whereas 10 million cubic metres are actually needed.

PATENTS.

APPLICATIONS PUBLISHED.*

134,533.—K. Rezsny: Furnace grates.

167,507.—A. M. E. Beavan: Means for heating rooms electrically.

167,511.—Penmaenmawr and Welsh Granite Co., Ltd. and H. W. Darbishire: Manufacture of paving sets.

167,521.—O. Stuart: Doors applicable for bulkheads, partitions and walls.

167,569.—A. Russell: Brick-making and pressing machines.

167,586.—W. E. White: Pivoted and hinged doors, windows, and fanlights.

145,416.—H. E. Kjolseth: Sliding doors and drawers.

149,339.—T. Kleinhans: Door fastenings.

150,994.—C. Candlot: Lime, cement, and like kilns.

167,697.—W. A. White: Furnace fronts.

167,716.—W. Baines: Material for use as linoleum, tiling, floor-covering, panelling, furniture construction, and other purposes.

167,790.—R. Motion: Machine for trenching, excavating, quarrying, rivetting, and like operations.

150,984.—Landers, Frary & Clark: Ranges.

140,408.—Ball Engine Co.: Steam shovels.

140,410.—Ball Engine Co.: Steam shovels.

142,839.—A. Tarjan: Hinges for doors and windows.

167,875.—W. K. Wise: Pre-cast centering for reinforced-concrete structures.

167,888.—F. M. Tozer and L. J. Pond: Walls.

167,918.—R. P. O'H. Theobalds: Fasteners for doors and gates.

167,931.—C. T. Knudsen: Loading and unloading appliances for road vehicles.

*All these applications are now in the stage in which opposition to the grant of Patents upon them may be made.

NEW COMPANIES.

THE particulars quoted below have been compiled by Messrs. Jordan & Sons, Ltd., Company Registration Agents, of 116 and 117, Chancery-lane, W.C.2, from the documents available at the Companies' Registry.

LAINDON CINEMA SYNDICATE, LTD. (176,627). Registered September 5. 61–62, Chancery-lane. W.C. 2. To acquire suitable sites for the erection and construction of cinematograph or recreation halls. Nominal capital, £500.

ART PRODUCTS, LTD. (176,639). Registered September 6. 43, Clerkenwell-road, E.C. Manufacturers, agents and dealers in statuary, statuettes and models. Nominal capital, £1,000.

WEST DOCK TIMBER CO., LTD. (176,675). Registered September 7. 16, Manchester-street, Kingston-upon-Hull.

G. N. WATTS, LTD. (176,663). Registered September 7. 147, High-street, Notting Hill Gate, W. Builders and decorators. Nominal capital, £8,000.

JOHN W. KIRK & CO., LTD. (176,692). Registered September 8. 19, King's College-road, Hampstead, N.W. Builders and contractors. Nominal capital, £100.

THOMAS RIDING & SON, LTD. (176,725). Registered September 9. 2, Chapel-street, Ormskirk, Lancaster. Joiners and contractors, shop and office fitters, &c. Nominal capital, £1,500.

A Builder's Estate.

The late Mr. John Williams, builder, of Swansea, left estate valued at £22,354.

The Commercial Motor Exhibition.

Organised by the Society of Motor Manufacturers & Traders, Ltd., the Commercial Motor Exhibition will be held at Olympia from October 14 to 22. The exhibits will range from the light commercial vehicle for run-about work to the lorry for the haulage of heavy goods, of which petrol, steam, and electric models will be shown.

Building Trade Wages in the Evesham District.

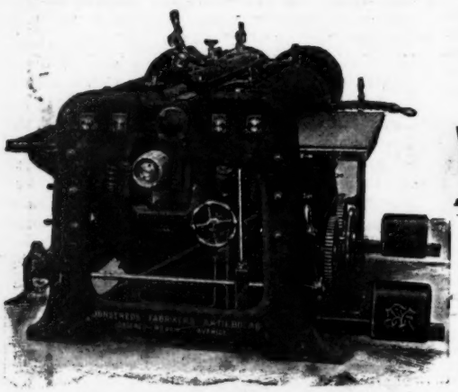
At a meeting of the members of the Evesham and District Master Builders' Association, held last week, Mr. E. J. Bomford presiding, the rates of wages prevailing in the surrounding districts, in accordance with the general reduction due as from September 1, were considered. It was agreed that a general reduction of 1d. per hour in all trades be made, to date from September 17.

Swedish Timber Trade.

The *Swedish Timber Trade Journal* states that the Swedish wood market has been stabilised in the last few weeks, and the lowest point has been reached. England is still interested in the market, and offers stream in from France. Holland, Denmark and Norway also buy Swedish timber. The exact figures for August and September are expected to approach pre-war figures, but the present price for many dimensions does not cover working expenses.

The L.C.C. School of Building.

We have received prospectuses of the day and evening classes at the London County Council School of Building for the Session 1921-1922. The syllabus comprises classes of instruction in all the building trades, and also courses specially arranged for youths desirous of entering the offices of architects, surveyors, builders, structural engineers, &c. Copies of the prospectuses, which contain complete time-tables and scales of fees may be obtained from Mr. H. W. Richards, the Principal, at the School, Ferndale-road, Clapham, S.W.4.



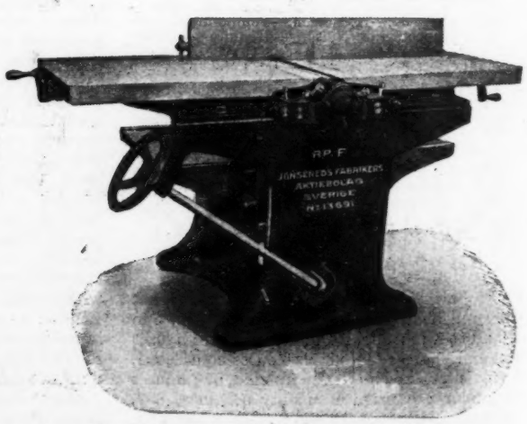
30 to 40 in. Surfacers with Grinding Attachment

JONSERED'S
WOOD-WORKING MACHINERY

THE SURFACERS AND PLANERS MADE BY JONSERED ARE UNSURPASSED FOR DESIGN AND FINISH. THEY ARE MADE IN TYPES SUITABLE FOR EVERY CLASS OF WORK.

LARGE STOCK ALWAYS ON HAND.

PROMPT DELIVERY CAN BE GIVEN.



Over and Under Planer with Safety Cutter Block

For further particulars, apply to—

JONSEREDS LONDON AGENCY

95, BISHOPSGATE, LONDON, E.C.2

PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry. Since our last issue various revisions have been made.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge. £ s. d.

Best Stocks 5 0 0

Per 1000, Delivered at London Goods Stations.

£ s. d.

Flettons 3 15 0

Best Stourbridge Fire bricks 12 14 0

Best Blue Pressed Staffordshire ... 11 11 6

Do. Bullnose .. 12 1 6

Blue Wire Cuts 9 14 0

GLAZED BRICKS—

Best White, Ivory, and Salt Glazed Stretchers .. 28 10 0

Headers 28 0 0

Quoins, Bullnose and 4½in. Flats 35 0 0

D'ble Str'tch'rs 37 0 0

D'ble Headers 34 0 0

One Side and two Ends .. 38 0 0

Two Sides and one End 39 0 0

Splays and Squints..... 36 10 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

	£ s. d.		
Thames Ballast	16 6	per yard,	delivered 2 miles radius Paddington.
Pit Sand	21 0	,, ,,	
Thames Sand	21 6	,, ,,	
Best Washed Sand	21 6	,, ,,	
¾ in. Shingle for Ferro-Concrete	21 0	,, ,,	
¼ in. ,, ,,	22 0	,, ,,	

Per ton. delivered in London area.

£ s. d.

Best Portland Cement ..... 4 3 6 .. 4 9 0

76/6 alongside at Vauxhall in 80-ton lots.

Ferrocrete per ton extra on above 10 0

Best Ground Blue Lias Lime 2 19 8 at rly. depot.

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks. The sacks are charged at 2s. 3d. each and credited at 2s. each if returned in good condition within three months.

Grey Stone Lime ..... 74s. 0d. per ton delivered.

Stourbridge Fireclay in sacks 44s. 8d. per ton at rly. dpt.

STONE.

BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R.. per ft. cube..... s. d. 3 2½

Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R.. per ft. cube 3 5½

Do. do. delivered on road wagons at Nine Elms Depot 3 6½

PORTLAND STONE—

Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L.& S.W.R., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube 4 11½

Do. do. delivered on road wagons at above stations, per ft. cube.. ..... 5 0½

White basebed, 3d. per ft. cube extra.

NOTE.—½d. ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30 ft.

YORK STONE, BLUE—*Robin Hood Quality.*

Delivered at any Goods Station London. s. d.

Scappled random blocks .....Per Ft. Cube 14 5

6 in. sawn two sides landings to sizes (under 30 ft. super.) .....Per Ft. Super 9 0

6 in. rubbed two sides, ditto ..... ,, 10 1

3 in. sawn two sides slabs (random sizes) ,, 3 11

2 in. to 2½ in. sawn one side slabs (random sizes) ..... ,, 2 5

1½ in. to 2 in. ditto, ditto ..... ,, 2 0

HARD YORK—

Delivered at any Goods Station London.

Scappled random blocks .....Per Ft. Cube 9 3

6 in. sawn two sides landing to sizes (under 40ft. super.) .....Per Ft. Super 8 6

6 in. rubbed two sides ditto ..... ,, 10 4

4 in. sawn two sides slabs (random sizes) ,, 4 11

3 in. ditto, ditto ,, 4 0

2 in. self-faced random flags ..Per Yard Super 12 2

WOOD.

GOOD BUILDING DEAL.

Inches £ s.

4 × 11..... 40 0 per standard

4 × 9 ..... 35 0 ,,

4 × 8 ..... 30 0 ,,

4 × 7 ..... 30 0 ,,

3 × 8 ..... 30 0 ,,

3 × 7 ..... 30 0 ,,

2½ × 7 ..... 25 0 ,,

3 × 6 ..... 25 0 ,,

3 × 11 ..... 35 0 ,,

2 × 11 ..... 35 0 ,,

3 × 9 ..... 35 0 ,,

2½ × 9 ..... 35 0 ,,

3 × 4½..... 25 0 ,,

3 × 4 ..... 22 0 ,,

PLANED BOARDS.

1 × 11 ..... 40 0 ,,

1 × 9 ..... 35 0 ,,

PLAIN EDGE FLOORING.

Inches

½ ..... 20/– per square

¾ ..... 22/6 ,,

1 ..... 24/– ,,

1¼ ..... 30/– ,,

1½ ..... 36/– ,,

TONGUED AND GROOVED FLOORING.

Inches

1 ..... 24/– per square

1¼ ..... 30/– ,,

1½ ..... 36/– ,,

WOOD (*Continued*).

MATCHINGS (BEST).

Inches

½ ..... 17/6 per square

¾ ..... 20/– ,,

1 ..... 27/6 ,,

BATTENS.

Inches s. d.

2 × 2 ..... 3 3 per 100 ft.

SAWN LATHS.

Per bundle 0 4 0

Dry Wainscot Oak, per ft. super, as inch	0	2	6 to	0	3 0
¼ in. do. do.	0	1	10½ to	0	2 6
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch	0	2	3 to	0	3 0
Cuba Mahogany	0	3	6 to	0	4 0
Teak (Rangoon, Moulmein or Java), per load.. ..	52	10	0 to	55	0 0
American Whitewood planks, per ft. cube ..	0	16	0 to	0	18 0
Best Scotch Glue, per cwt.	10	0	0 to	—	
Liquid Glue, per cwt.....	5	8	0 to	6	15 0

SLATES.

1st quality slates from Bangor or Portmadoc in truck load delivered London area. Per 1,000 of 1,200.

£ s. d.

Best Blue Bangor Slates,	24 by 12	56	10 0
,, ,,	22 by 12	46	0 0
First quality ,,	22 by 11	42	10 0
,, ,,	20 by 12	42	0 0
Best Blue Portmadoc	20 by 10	36	10 0
,, ,,	18 by 10	29	10 0
First quality ,,	18 by 9	24	5 0
,, ,,	16 by 10	22	15 0
,, ,,	16 by 8	18	0 0

TILES.

Per 1,000 f.o.r. London.

£ s. d.

Best machine-made tiles from Broseley or Staffordshire district..... 7 15 0

Ditto hand-made ditto..... 8 10 0

Ornamental ditto 7 7 6

Hip and valley tiles (per dozen) 0 15 0

METALS.

JOISTS, GIRDERS, &C., TO LONDON STATION PER TON—

£ s. d.

R. S. Joists, cut and fitted 22 0 0

Plain Compound Girders 25 0 0

,, Stanchions 27 0 0

In Roof Work 32 0 0

WROUGHT-IRON TUBES AND FITTINGS—

(Discount off List for lot of not less than £15 net value delivered direct from works. 5 per cent. less above gross discounts, carriage forward if sent from London stocks.)

	Tubes. ¼" to 2".	2¼" to 6".	Fittings. ¼" to 2".	2¼" to 6".
Gas.....	—30	—35 ..	—30	—37½
Water	—20	—27½ ..	—25	—35
Steam	—10	—20 ..	—20	—32½
Galv'd Gas	—12½	—17½ ..	—22½	—30
,, Water	— 1½	— 8½ ..	—17½	—27½
,, Steam	+10	Nett. ..	—12½	—25

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6 fts..	5 10½	.. 4 2	.. 5 0
2½ in. ,, ,,	7 0½	.. 4 7	.. 6 3
3 in. ,, ,,	8 4½	.. 5 0	.. 7 6
3½ in. ,, ,,	9 3	.. 6 3	.. 8 9
4 in. ,, ,,	10 7	.. 7 1	.. 10 0

RAIN-WATER PIPES, &C.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6fts. plain	5 2	.. 2 6	.. 3 5
2½ in. ,, ,,	5 9	.. 3 0	.. 4 2
3 in. ,, ,,	6 8	.. 3 8	.. 5 6
3½ in. ,, ,,	7 9	.. 4 4	.. 6 5
4 in. ,, ,,	8 10	.. 5 4	.. 7 0

L.C.C. DRAIN PIPES.—9 ft. lengths. London Prices. per yd.: 4 in., 10/3. ..5 in., 12/3. .. 6 in., 14/9.

Per ton in London.

	£ s. d.		£ s. d.
IRON— Common Bars	18 10 0	to	19 10 0
Staffordshire Crown Bars — good merchant quality	19 10 0	..	20 10 0
Staffordshire "Marked Bars"	24 0 0	..	25 0 0
Mild Steel Bars	16 0 0	..	17 0 0
Steel Bars. Ferro-Concrete quality, basis price ..	16 10 0	..	17 0 0
Hoop Iron, basis price ..	24 0 0	..	25 0 0
,, Galvanised ..	38 0 0	..	40 0 0
Soft Steel Sheets, Black— Ordinary sizes to 20 g.	23 0 0	..	25 0 0
,, ,, ,, 24 g.	24 0 0	..	26 0 0
,, ,, ,, 26 g.	26 0 0	..	27 0 0
Sheets Flat Best Soft Steel, C.R. & C.A. quality— Ordinary sizes, 6ft. by 2ft. to 3ft. to 20 g.	30 0 0	..	32 0 0
Ordinary sizes, 6ft. by 2ft. to 3ft. to 22 g. and 24 g.....	31 0 0	..	33 0 0
Ordinary sizes, 8ft. by 2ft. to 3ft. to 26 g...	33 0 0	..	35 0 0
Flat and Galvanised Corrugated Sheets— Ordinary sizes, 6 ft. to 9ft. 20 g.	27 0 0	..	28 0 0
Ordinary sizes, 6ft. to 9ft. 22 g. and 24 g.	28 0 0	..	29 0 0
Ordinary sizes 6ft. to 9ft. 26 g.	30 0 0	..	32 0 0

METALS (*Continued*).

Per ton in London.

	£ s. d.		£ s. d.
Sheets Galvanised Flat, Best quality— Best Soft Steel Sheets, 6ft. by 2ft. to 3ft. to 20g. and thicker ..	33 0 0	..	34 0 0
Best Soft Steel Sheets, 22 g. and 24 g.	34 0 0	..	35 0 0
Best Soft Steel Sheets, 26 g.	36 0 0	..	37 0 0
Cut Nails, 3in. to 6in. .. (under 3in. usual trade extras.)	29 0 0	..	30 0 0

METAL WINDOWS—Standard sizes suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 3s. per foot super.

LEAD, &c.

Delivered in London.

	£ s. d.		
LEAD—Sheet, English, 4 lb. and up	35 10 0	..	—
Pipe in coils	36 0 0	..	—
Soil Pipe	38 10 0	..	—
Compo pipe	39 10 0	..	—

NOTE—Country delivery, 30s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.

Old lead, ex London area, at Mills ..... per ton	19 0 0	..	—
Do., ex country, carriage forward..... per ton	20 0 0	—	—
COPPER— Strong Sheet ....per lb.	0 2 3	—	—
Thin ,, ... ,,	0 2 4	..	—
Copper nails .... ,,	0 2 3	..	—
Copper wire .... ,,	0 2 4	..	—
TIN—English Ingots ,,	0 1 10	..	—
SOLDER—Plumbers' ,,	0 0 11	..	—
Tinmen's..... ,,	0 1 2	..	—
Blowpipe ..... ,,	0 1 4	..	—

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

Per Ft.

15 oz. fourths	4½d.	32 oz. fourths	10½d.
,, thirds	5½d.	,, thirds	1/–
21 ,, fourths	6½d.	Fluted, Obscured and Enamelled Sheet.	
,, thirds	7½d.	15 oz.	7d.
26 ,, fourths .. .	8d.	21 ,,	9d.
,, thirds	9½d.		

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

Per Ft.

¼ Rolled plate	5½d.
⅜ Rough rolled	6½d.
½ Rough rolled	7½d.
Figured Rolled, Oxford Rolled, Baltic, Oceanic Arctic, Stippolyte, and small and large Flemish white	7½d.
Ditto, tinted	8½d.
Rolled Sheet	8½d.
White Rolled Cathedral.....	8½d.
Tinted do.	7½d.

Cast Plate is ½d. extra on the price of rough rolled.

PAINTS, &c.

		£ s. d.
Raw Linseed Oil in pipes..... per gallon		0 3 9
,, ,, ,, in barrels .... ,,		0 3 10
,, ,, ,, in drums .... ,,		0 3 11
Boiled ,, ,, in barrels .... ,,		0 4 3
,, ,, in drums .... ,,		0 4 4
Turpentine in barrels ..... ,,		0 5 10
,, in drums (10 gall.) .. ,,		0 6 1
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)		59 15 0
GENUINE WHITE LEAD PAINT— "Father Thames," "Nine Elms," "Park," "Supremus" and other best brands (In 14 lb. tins) not less than 5 cwt. lots .....per ton delivered		82 15 0
Red Lead, Dry (packages extra) .. per ton		41 0 0
Best Linseed Oil Putty ..... per cwt.		0 17 6
Filocol..... per cwt.		0 15 0
Size. X D Quality.....	fkn.	0 5 9

VARNISHES, &c.

Per gallon.

		£ s. d.
Oak Varnish.....Outside		0 15 0
Fine ditto ..... ditto		0 17 2
Fine Copal ..... ditto		1 1 6
Pale Copal ..... ditto		1 2 6
Pale Copal Carriage ..... ditto		1 4 0
Best ditto ..... ditto		1 14 6
Floor Varnish..... Inside		0 19 0
Fine Pale Paper ..... ditto		0 18 0
Fine Copal Cabinet ..... ditto		1 2 6
Fine Copal flatting ..... ditto		1 0 6
Hard drying Oak ..... ditto		0 18 0
Fine Hard drying Oak ..... ditto		0 19 0
Fine Copal Varnish ..... ditto		1 0 6
Pale ditto ..... ditto		1 2 6
Best ditto ..... ditto		1 14 6
Best Japan Gold Size.....		0 12 6
Best Black Japan		0 18 0
Oak and Mahogany Stain (water)		0 17 6
Brunswick Black		0 11 0
Berlin Black.....		0 16 6
Knotting (patent)		1 16 0
French and Brush Polish		0 18 0
Liquid Dryers in Terebine		0 13 6
Cuirass Black Enamel		0 7 0

* The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

CURRENT PRICES FOR BUILDING WORK IN LONDON.*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	18	0
Add if in clay	" "	1	10
Add for every additional depth of 6 ft.	" "	1	4
Planking and strutting to trenches	per foot super	0	7
Do. to sides of excavation, including shoring	" "	1	4

CONCRETOR.

		s.	d.
Portland cement concrete in foundation 1 to 6	per yard cube	40	0
Add if in underpinning in short lengths	" "	9	6
Add if in floors 6 in. thick	" "	3	0
Add if in beams	" "	4	9
Add if aggregate 1 : 2 : 4	" "	14	3
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	" "	4	3

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	47	10	0
Add if in stocks	"	11	17	6
Add if in Staffordshire blues	"	31	2	6
Add if in Portland cement and sand	"	4	0	0

FACINGS.

		s.	d.
Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1¼

POINTING.

		s.	d.
Neat flat strucks or weathered joint	" "	0	0	3

ARCHES.

		s.	d.
Extra only to the price of ordinary brickwork :—			
Fair external in half brick rings	" "	0	0	11½
Axed in stocks	" "	0	1	11
Rubbed and gauged jointed in putty camber or segmental	" "	0	6	8

SUNDRIES.

		s.	d.
Damp course in double course of slates breaking joint and bedded in Portland cement	" "	0	1	6
Setting ordinary register grates and stoves	each	1	2	6
Setting kitchener, including forming flues, &c., with all necessary fire bricks	"	6	5	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard sup.	8	0
Three-quarter-inch vertical damp course	" "	14	3
One inch on flats in two thicknesses	" "	12	0
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	" "	1	6

MASON.

		s.	d.
York stone templates fixed	per foot cube	19	9
York stone sills fixed	" "	31	6
Bath stone and all labour fixed	" "	15	0
Portland stone fixed	" "	23	0

SLATER.

		s.	d.
Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	98	0
Do. 20 in. × 10 in. Do. Do.	"	115	0
Do. 24 in. × 12 in. Do. Do.	"	117	6

CARPENTER AND JOINER.

		s.	d.
Fir framed in plates	per foot cube	7	0
Do. joists	" "	8	0
Do. roofs, floors and partitions	" "	9	3
Do. trusses	" "	11	9

		¾"	1"	1¼"	2"
Deal rough close boarding	per sq.	42/-	48/-	56/-	85/-

		s.	d.
Flat centering for concrete floor, including struts or hangers	"	63	0
Do. to beams	per ft. sup.	1	6
Centres for arches	"	2	0
Gutter boards and beams	"	1	8

FLOORING.		¾"	1"	1¼"	1½"
Deal-edges shot	per sq.		54/-	64/-	74/-
Do. tongued and grooved	"		60/-	72/-	80/-
Do. matchings	"	45/-	55/-		
Moulded skirting, including backings and grounds	per ft. sup.	2/-	2/3	2/9	3/3

SASHES AND FRAMES.		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	11
Two Do. Do. Do.	" "	2	4½
Add for fitting and fixing	" "	0	6
Deal-cased frames with 1 in. inner and outer linings, 1¼ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares double hung, double hung with pulleys, lines and weights; average size	" "	4	11

DOORS.		1½"	1¾"	2"
Two-panel square framed	per ft. sup.	2/6	2/9	2/11
Four-panel Do.	"	2/10	3/2	3/5
Two-panel moulded both sides	"	3/2	3/5	3/8
Four-panel Do. Do.	"	3/3	3/9	4/-

CARPENTER AND JOINER—continued.

FRAMES.		s.	d.
Deal wrot moulded and rebated	per foot cube	19	0

		1"	1¼"	1½"
Plain deal jamb linings framed	per ft. sup.	2/1	2/3	2/6
Deal shelves and bearers	"	1/10	2/-	2/1
Add if cross tongued	"	2d.	2d	2d.

STAIRCASES.	1"	1¼"	1½"	2"	2½"
Deal treads and risers in and including rough brackets	3/2	3/10	4/5	—	—
Deal strings wrot in both sides and framed	4/3	4/6	—	—	—

		s.	d.
Housings for steps and risers	each	0	11½
Deal balusters, 1 in. × 1¼ in.	per ft. run.	0	9
Mahogany handrail; average 3 in. × 3 in.	" "	6	0
Add if ramped	" "	11	10
Add if wreathed	" "	23	9

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/4½
Sash fasteners	11½d.	Mortice locks	5/3
Casement fasteners	1/5	Patent spring hinges and letting in to floor and making good	19/-
Casement stays	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	25	0
Plain compound girders	"	28	0
Do. stanchions	"	31	0
In roof work	"	36	0

RAIN-WATER GOODS.

		3"	4"	5"	6"
Half-round plain rebated joints	ft. run	1/11	2/4½	3/7	4/-
Ogee Do. Do.	"	2/4½	3/1	3/10	4/9
Rain-water pipes with ears	"	2/9	3/7		
Extra for shoes and bends	each	4/4	5/11		
Do. stopped ends	"	1/11	2/4½	3/7	4/-
Do. nozzles for inlets	"	2/2	2/7	3/10	4/3

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	56	0
Do. Do. in flats	"	52	0
Extra labour and solder in coated cesspools	each	7	4
Welt joint	per ft. run.	0	6
Soldered seam	" "	1	10½
Copper nailing	" "	0	7

		½"	¾"	1"	1½"	2"	4"
Drawn lead waste	per ft. run	11d.	1/7	1/10	3/3	4/-	
Do. service	"	1/6	2/-	2/4	3/8		
Do. soil	"						6/6
Bends in lead pipe	each					3/5	8/7
Soldered stop ends	"	1/3	1/9	2/2	3/-	3/8	
Red lead joints	"	11d.	1/-	1/4	2/-	2/6	5/1
Wiped soldered joints	"	3/-	3/8	4/3	5/2	6/10	10/3
Lead traps and cleaning screws	"				15/4	20/6	
Bib cocks and joints	"	7/1	10/8	17/1	45/6		
Stop cocks and joints	"	17/1	19/-	28/6	71/3		

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	3	2
Do. Do. Sirapite	" "	3	7
Do. Do. Keen's	" "	4	9
Add sawn lathing	" "	1	11
Add metal lathing	" "	3	4
Portland cement screed	" "	2	9
Do. plain face	" "	4	6
Mouldings in plaster	per 1 girth	0	3
One-and-a-half granolithic pavings	per yard sup.	6	7

GLAZIER.

		s.	d.
21 oz. sheet plain	per foot sup.	1	4
26 oz. Do.	" "	1	7
Obscured sheet	" "	1	9
⅛ in. rolled plate	" "	1	0
¼ in. rough rolled or cast plate	" "	1	1
¼ in. wired cast plate	" "	1	7

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	1	5
Knotting and priming	" "		11
Plain painting 1 coat	" "	1	5
Do. 2 coats	" "	2	3
Do. 3 coats	" "	3	0
Do. 4 coats	" "	3	10
Graining	" "	2	10
Varnishing twice	" "	2	4
Sizing	" "	0	4
Flatting	" "	0	9
Enamel	" "	1	11
Wax polishing	per foot sup.	0	10½
French polishing	" "	1	8
Preparing for and hanging paper	per piece	2/- to 5/-	

* These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1¼ should be added for Employers' Liability and National Health and Unemployment Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities "proposed" works at the time of publication have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

AMERSHAM.—Plans passed by R.D.C.: Bungalows at Chalfont-road, Chalfont St. Giles, Ballinger, Chalfont St. Peter, Seer Green and White Lion-road, Amersham; garage at Knotty Green; additions to The Croft, Chesham Bois; house, Chalfont St. Peter.

ATHERSTONE.—Plans have been received by the U.D.C. for alterations to the London City and Midland Bank.

BARNES.—Plans passed by U.D.C.: Eight houses, Brecken-gardens, by Mr. A. C. Kerven; six houses, Hertford-road, by Mr. A. Basden; new vicarage for St. Michael and All Angels' Church, by Messrs. Giles, Gough & Trollope; four houses, Hertford-road, for Mr. H. Besdenz; house, Upper Sheen-road, for Mr F. H. Shearley; four houses, Westmoreland-road, for Mr. A. Harvey; house, Percival-road, for Mr. G. H. Gale.

BARNSLEY.—Plans passed by T.C.: G. F. Atkinson, additions to house, 59, Shaw-street; Mrs. Miller, shop in Market-street; A. Bray, shed off Mount-street; W. H. Jackson, garage and store off Dodworth-road.

BROMLEY.—Plans passed by T.C.: House, Sunningdale-road, for Mr. F. G. Crickett; ten houses, Avondale-road, for Mr. A. V. Frampton; petrol-store, Mason's-hill, for the American Oil Co.

CHELTENHAM.—The T.C. has passed plans for a cinema at the rear of the "Plough Hotel," for the Gloucester Cinemas (1920), Ltd.

DARTON.—The U.D.C. has approved a plan for the Blackburn Bobbin Mill Co. for extensions to Excelsior Works, Darton, and a plan for Messrs. Fountain & Burnley, for additions to Oaklea House, Darton.

DONCASTER.—The T.C. is seeking permission to construct a railway along Trafford-street and Factory-lane at an estimated cost of £10,000.

EARSDON.—Plans for the erection of a Masonic Hall at Shiremoor have been passed by the U.D.C.

GLASGOW.—An application for lining to erect a picture-house, shops, and offices fronting Mordaunt and Nuneaton-streets, lodged by the Dalmarnock Picture House, Ltd., has been granted by the Glasgow Dean of Guild Court. The cost of the building is estimated at over £25,000.

GREAT YARMOUTH.—Plans passed by T.C.: House, Hamilton-road, for Messrs. J. Balls & Son; two bungalows, Highfield-road, for the Gorleston Cliff Estate Co.; extension to offices, South Denes-road, for Messrs. Bloomfields, Ltd.; addition to premises, Alma-road, for Messrs. Williamson & Co.

KIRKBURTON.—Plans of picture houses proposed to be erected at Broom Stile-road and at North-road have been approved.

LIVERPOOL.—The Theatres Committee has passed plans for a cinema at Boreland Bank, Wellington-avenue, a cinema at the corner of Walton-road and Luton-grove, a new hall at City-road, a cinema at Moss-lane, Orrell-park, and a picture-house in Norton-street.—The Mersey Dock Board propose adapting two blocks of warehouses between Rodney-street and Blake-street, Bootle, for warehousing tobacco at an estimated cost of £6,800.

LLANELLY.—The managers of the Llanelly Roman Catholic Schools have submitted plans to the local education authority of proposed new school buildings to accommodate 150 children. A site has been procured at the rear of Goring-road.

LUTON.—Plans passed by T.C.: House, Biscot-road, Mr. F. Willis; six houses, Dunstable-road, Mr. F. F. Tims; two houses, Lincoln-road, Mr. E. Hillyard; house, Farley-hill, Mr. H. W. Kilby; house, Ashburnham-road, Frost and Carter; four houses, Claremont-road, Mr. T. E. Cuffley; two houses, Talbot-road, G. Kingham & Son; five houses, Ashburnham and Ferndale-roads, Mr. S. W. Johnson; three houses, New Bedford-road, Mr. F. Chandler; and two houses, Mansfield-road, Hill and Timpson.

MANSFIELD.—Plans passed by T.C.: Bathrooms, Stockwell-gate, for Mr. J. B. Davis; house, St. Johnstreet, for Dr. G. T. Tate; bungalow, Stette-street, for Mr. G. H. Allen; house, Alexandra-avenue, for Mr. J. Butler; conversion of house into house and shop, Newgate-lane, for Mr. J. Holloway; additions to houses, Mill-street, for Messrs. Ward & Welsh; bungalow, Southwell-road, for Mr. W. W. Anstee; cart-shed, Moody-lane, for Mr. H. H. Beeley; house and shop, Southwell-road, for Mr. J. W. Baxter; bungalow, Southwell-road, for Mr. A. J. Copestake.

MERIDEN.—Plans for the erection of dwellings and temporary buildings have been passed by the R.D.C. for the following parishes: Maxstoke, Marston-green, Bickenhill, Berkswell, Coleshill, Minworth, Sheldon, Castle Bromwich, and Corley.

NEWPORT (MON.).—The Ministry of Health has agreed to the erection of a further 250 houses on the Somerton estate. The Ministry suggest that contracts for 110 houses only be let at present, urging that a delay in placing the contracts for the remainder would benefit both the council and the Government, as prices were falling. A contract has been sealed for the building of 110 houses at £690 per house, subject to the rise and fall of labour and materials.

ROTHERHAM.—At the last meeting of the R.D.C. plans for new offices and board-room on the Moorgate-site were submitted, and a contract with Messrs Henry Boot & Sons, Ltd., for laying sewer at Brampton Bierlow, and the Chesterfield Quarry Co., Ltd., for sewage tank at Ravenfield were signed. It was stated that sanction had been received for the erection of a further 20 houses of the "B" type at Brinsworth at a cost of £720 per house. The Council were expecting to obtain approval for 40 houses at Thrybergh and six at Maltby.

ST. THOMAS.—The R.D.C. is considering a drainage scheme for the parish of Woodbury, estimated to cost £2,500.

SOUTH CROSLAND.—Plans passed: Alterations to three cottages at Crosland Factory, for Liebig Medicated Wine Co.

SWANSEA.—Plans passed by T.C.: One house, Hoel-fach, Treboeth, for Mr. John Davies; one house, Clydach-road, for Mr. John Butler; alterations, "The Tivoli," Carmarthen-road, for Mr. H. Thomas; additions, Mansel-road, Bonymaen, for Mrs. Harding; garage, 10, Beechwood-road, for Mr. E. L. Morgan; house, Bethel-road, Llansamlet, for Mr. D. W. Rosser; additions, Oystermouth-road, West Cross, for Mr. E. L. Wells; two houses, Park Wern-road, for Mr. J. G. Osborne; bungalow, New-road, off Carnglas-road, for Mr. E. L. Bennett; bungalow, New-road, off Carnglas-road, for Mr. C. Jenkins; bungalow, Dunvant, for Mr. D. C. Pugh; bungalow, Dunvant, for Mr. A. E. Davies; additions, Gorse-road, for Mr. Taylor; two houses, Hadland-terrace, West Cross, for Mr. F. E. Beer; two bungalows, Queen's-road, for Messrs. W. H. Harding & Co.; one bungalow, Hendrefoilan-road, for Mr. George Luke; two houses, Eden-avenue, for Messrs. John Pye & Co.; bungalow, Hendrefoilan-road, for Mr. W. Jones; one house, Devon-terrace, for Mr. W. Coutts; garage, 122, Eaton-grove, for Mr. T. H. Couch; garage, 121, Robert-street, for Mr. H. Berchenough; bungalow, Victoria-road, Waunarlwydd, for Mr. W. John; two houses, Eversley-road, for Mr. J. G. Osborne; additions, Llangyfelach-road, Morriston, for Mr. D. Joseph; additions, Caemawr, Morriston, for Mr. Thomas Evans; additions, Boarspit-lane, West Cross, for Mr. H. Saunders; garage, Derwen Fawr-road for Capt. Yarwood; additions, Tavistock-road, for Messrs. Kirkman & Macdonnell; garage, Melbourne-place, for Messrs. S. Palmer & Sons; additions, Eversley-road, for Mr. D. J. Thomas; bakehouse, 50, Norfolk-street, for Mr. J. Andrew; garage, Northampton-lane, for Mr. Evan Rees; stable, Carmarthen-road, Gendros, for Mr. John Rees; shop front, 15, Ysgol-street, for Mr. F. Ley; piggeries, The Mayals, for Messrs. J. Thomas & Co.; additions, Main-road, Mumbles, for Mr. J. H. Banfield; three bungalows, Slade-road, Mumbles, for Messrs. E. & A. Howells and A. Lewis; house, Limekiln-road, Mumbles, for Mr. R. L. Parker; bungalows, Mynydd-bach-y-glo, for Mr. J. J. Hughes; six bungalows, New-road, off Carnglas-road, Sketty, for Mr. W. Jones; bungalow, Middle-road, Gendros, for Mr. E. Jeffreys; bungalow, Caemawr, Morriston, for Mr. D. J. Evans; garage, Martin-street, Morriston, for Mr. E. Samuel; bungalow, Boarspit-lane, Norton, for Mr. Bart. Beer; cartshed and storeroom rear of Glanbrydan-avenue, for Mr. E. E. L. Tucker; porch, Zion Chapel, Swansea-road, Waunarlwydd, for the Trustees of Zion Chapel; garage, Westfa-road, for Messrs. John Pye & Co.; bungalow, Hendrefoilan-road, for Mr. H. Langtry; garage, Heathfield-street, for Mr. L. G. Bullin; store, 8, Gwydr-terrace, for Messrs. W. H. Harding & Co.; additions, Sketty Park-road, for Mr. H. S. L. Cook; alterations, Eagle-chambers, Adelaide-street, for Messrs. Cleeves; house and shop, Birchgrove, for Messrs. Morris & Co.; bungalow, Penyrheol, Sketty for Mr. W. B. Jones; one house, Limekiln-road, Mumbles, for Mr. W. P. Rosser; garage, Saddler-street, for Mr. J. Hayes.

FIRES.

BERWICK.—Damage estimated at about £10,000 was caused by a fire which broke out in the maltings attached to the Tweed Brewery, Berwick, last week. Workmen had just finished reconstructing a portion of the building which had been burned down as the result of a minor outbreak a few weeks ago.

CAMBERWELL.—Damage estimated at £30,000 has been caused by fire which broke out at the cocoa and chocolate manufactory of Messrs. Mansfield & Co., Ltd., Glengall-road, Old Kent-road, Peckham.

CRANLEIGH.—A fire has destroyed the bakehouse and stores of Cranleigh School.

GLASGOW.—By an outbreak of fire in the Union Transit Co.'s Stores, Cadogan-street, damage was caused to the extent of several thousands of pounds. The building was gutted.

PRESTON.—Damage roughly estimated at £20,000 has been done by fire at Messrs. Horrockses, Crewdson & Co.'s dyeing and bleaching works.

* See also our **List of Contracts, Competitions, etc**

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach him *not later than Tuesday evening.*

***Denotes *accepted*. †Denotes *provisionally accepted*.**
‡Denotes *recommended for acceptance*.
§Denotes *accepted subject to modifications*.

ASHTON-UNDER-LYNE.—For repaving the north side of Stamford-street and Stamford-square, for the Corporation. Mr. J. Rowbottom, Borough Surveyor, Town Hall, Ashton-under-Lyne. Quantities by Borough Surveyor:—

*P. D. Heys & Sons, Stockport; W. H. Worthington Ltd., Manchester; Brown & Co., Stockport; A. Hobson & Sons, Ashton-under-Lyne.

BARNSLEY.—For making up the back road between Bank-street and Cope-street, for the T.C. Mr. Harold Taylor, Borough Engineer, Manor House, Barnsley:—

Bank-street:
*Henry Hibbert, Barnsley £622 0 6
Back-road:
*Fred Taylor, Barnsley 280 0 0

BARNSLEY.—For alterations and additions to the Borough Police Offices, St. Mary's-gate, Barnsley. Mr. Harold Taylor, Borough Engineer, Barnsley:—

*George Haigh & Sons, Barnsley (*builder*)	£475 0 0
*J. Watling & Sons, Barnsley (*joiner*)	252 0 0
*S. Rushforth & Sons, Barnsley (*plumber*)	61 12 0
*E. Lindley, Barnsley (*plasterer*)	36 17 3

BARNSLEY.—Erection of greenhouse at Cemetery, for the T.C.:—

*Boulton & Paul, Norwich £246

BARNSLEY.—Painting portions of Manor House, for the T.C.:—

*Fletcher £271

BARNSLEY.—For alterations and additions to the Police Offices, for the T.C.:—

*G. Haigh (*excavator work, &c*)	£475 0 0
*J. Watling & Son (*carpenter*)	252 0 0
*T. Lindley (*plasterer*)	36 17 3
*S. Rushforth & Sons (*plumber*)	61 12 0

BARNSLEY.—Alterations to seating arrangements of Council Chamber, for the T.C.:—

*Elliotts, Reading £1,400

BARNSLEY.—Construction of Knoll Brook Works, for the Water Dept. of the T.C.:—

*Joseph Stafford Bros. £29,829 3 3

BRISTOL.—For swimming bath at North Bristol, for the Corporation:—

‡F. Chown & Co. £17,950

BROMLEY (KENT).—For extension works (Contract No. 3), for the West Kent Main Sewerage Board

*W. F. Blay, Ltd.	£45,495 0 0
British Construction Co.	46,822 0 0
Edwards Construction Co.	48,972 0 0
P. & W. Anderson, Ltd.	52,545 0 0
F. Mitchell & Son, Ltd.	53,267 17 9
J. Shellbourne & Co.	53,920 19 6
W. Jones & Sons	55,015 13 10
Concrete Piling, Ltd.	56,929 10 1
Thorby & Matthews	60,155 7 5
J. Mowlem & Co., Ltd.	62,452 15 11
Davidson & Sykes, Ltd.	65,565 11 9
Balfour, Beatty & Co., Ltd.	66,793 4 11
J. Byrom, Ltd.	66,997 7 8
J. & W. Stewart	69,020 12 1
T. Shillitoe	69,650 0 0
A. Roberts & Co., Ltd.	71,200 0 0
Playfair & Toole	73,384 17 5
Silwood Construction Co.	75,582 10 3
A. Jackaman & Son, Ltd.	75,626 0 0
F. Bevis, Ltd.	76,500 0 0
Kinnear, Moodie & Co.	76,643 14 3
S. Pearson & Son, Ltd.	78,942 3 5
Unit Construction Co.	79,684 3 6
Christiani & Neilson	98,195 4 5
Watkins, Williams & Sons	101,083 0 0
Gill Contractors, Ltd.	116,258 5 2

**Accepted subject to modification.*

HAVERFORDWEST.—For erection of Pembrokeshire War Memorial Hospital, Mr. Hugh J. P. Thomas, O.B.E., architect, 9 and 11, Victoria-place, Haverfordwest. Mr. H. J. Venning, F.S.I., quantity surveyor, 35, Bedford-row, W.C.:—

*Thornton Hall, Haverfordwest	£24,921 12 10
Wm. Moss & Sons, Loughborough	24,300 0 0
Thomas Shillitoe, London	24,750 0 0
John Laing & Sons, Carlisle	27,048 0 0
Wilson Lovatt & Sons, Wolverhampton	27,913 0 0
Walter W. Peck, Cardiff	28,592 0 0
J. O. Morgan, Sons & Co., Haverfordwest	32,952 5 7
Geo. Mercer & Sons, Llanelly	36,900 0 0
Henry Billings & Sons, Swansea	38,500 0 0

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Docks Saw Mills, Manchester
Wharf Saw Mills, Manchester.

EASINGTON.—For the erection of stables and cart shed at Turton Colliery, for the R.D.C. Mr. F. W. Girven, surveyor, Easington Colliery Co., Durham :—

J. W. Liddle & Co., Easington Colliery Co., Durham £1,284 16

LLANGRANOG.—For painting and colouring of Bancyfelin Methodist Chapel. Mr. Rhys Jones, architect, Llandyssul :—

*Davies Bros., Newcastle-Emlyn £130

MAIDSTONE.—For converting the Howard de Walden Institute into an extension of the West Kent Hospital :—

Elmore & Son (*structural work and alterations* £797 0
Elmore & Son (*painting and decorating*) 398 10
William E. Cogner (*electric lighting*).. 210 15

NEWPORT (MON.).—Building out-patients' department and dispensary at Royal Gwent Hospital :—

*R. W. Moon £38,000

SOUTHEND-ON-SEA.—Repair of carriageway from the High-street to London-road :—

*London Asphalt Co. £1,400

SOUTHEND-ON-SEA.—Reconstruction of roof of store shed at Generating Station, for the T.C. :—

*Flaxman & Sons, Southend £285

SOUTHEND-ON-SEA.—Construction of oak staircase at Prittlewell Priory, for the T.C. :—

*Davey & Armitage, Southend £185

SOUTHEND-ON-SEA.—Erection of building over pumps at Generating Station, for the T.C. :—

*Davey & Armitage, Southend £109

TRADE NEWS.

"A House that Solves Every Problem" is the attractive title of a brochure issued by Messrs. Bell's United Asbestos Co., Ltd. (Southwark-street, S.E. 1), and the contents give one the impression that the firm has gone a long way towards the provision of such a desirable home. Various types of houses and bungalows are illustrated in perspective and plan, and the approximate inclusive cost of erection is given in each case. The houses are, of course, constructed of Messrs. Bell's well-known building materials, namely, cement-concrete slabs faced with "Poilite," a waterproof asbestos-cement sheeting. The roofing may be in either grey diagonal tiles or red pantiles made of "Poilite." A separate booklet dealing with "Poilite" has also come to hand, and this contains particulars and illustrations of bungalows, garages, workshops, &c., carried out in that material and timber.

A new and comprehensive catalogue, of some eighty pages, has been issued by Messrs. Marryat & Scott, Ltd., of 28, Hatton-garden, E.C. 1, the well-known lift manufacturers. The catalogue is well printed on art paper, and several of the illustrations of lift enclosures are in colour. Lifts and their accessories for all purposes are illustrated and fully described, dimensions, capacity and prices being fully set out. The firm claim that this is more than a catalogue, and that it contains sufficient information to enable anyone to design a lift and select the equipment most suitable for any special requirements. The catalogue contains a great deal of information of use to those responsible for installing lifts and to lift users generally. The designs for lift enclosures and lift gates are in excellent taste.

We have received from Messrs. J. H. Sankey & Son, Ltd., of Essex Wharf, Canning Town, E. 16, a booklet describing the uses of their "Pyruma" fire cement. The material is specially recommended for repairing and fixing brickwork; but it can also be used for any purpose for which fireclay or cement is used. It is plastic when supplied, and when exposed to the air after it has been applied it sets hard. It is not affected by heat or cold, and can be applied to hot surfaces without any detrimental effect on its setting qualities.

The Nautilus Fire Co., Ltd. (60, Oxford-street, London, W. 1), have recently added to their well-known series of coal-saving appliances the "Nautilus-Danish" coke stoves, which are claimed to effect remarkable economies in the domestic fuel bill, to be inexpensive in first cost, to be highly efficient, and to give off neither smoke nor fumes. These coke stoves are stated completely to meet the objections which have hitherto existed against the use of coke as a domestic heating agent. The firm are holding an exhibition of these stoves and other coal-saving appliances at 60, Oxford-street, W. 1.

Messrs. C. Baker, of 244, High Holborn, W.C.1, have issued a new edition of their catalogue of secondhand scientific instruments, which includes many instruments used in surveying and building.

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